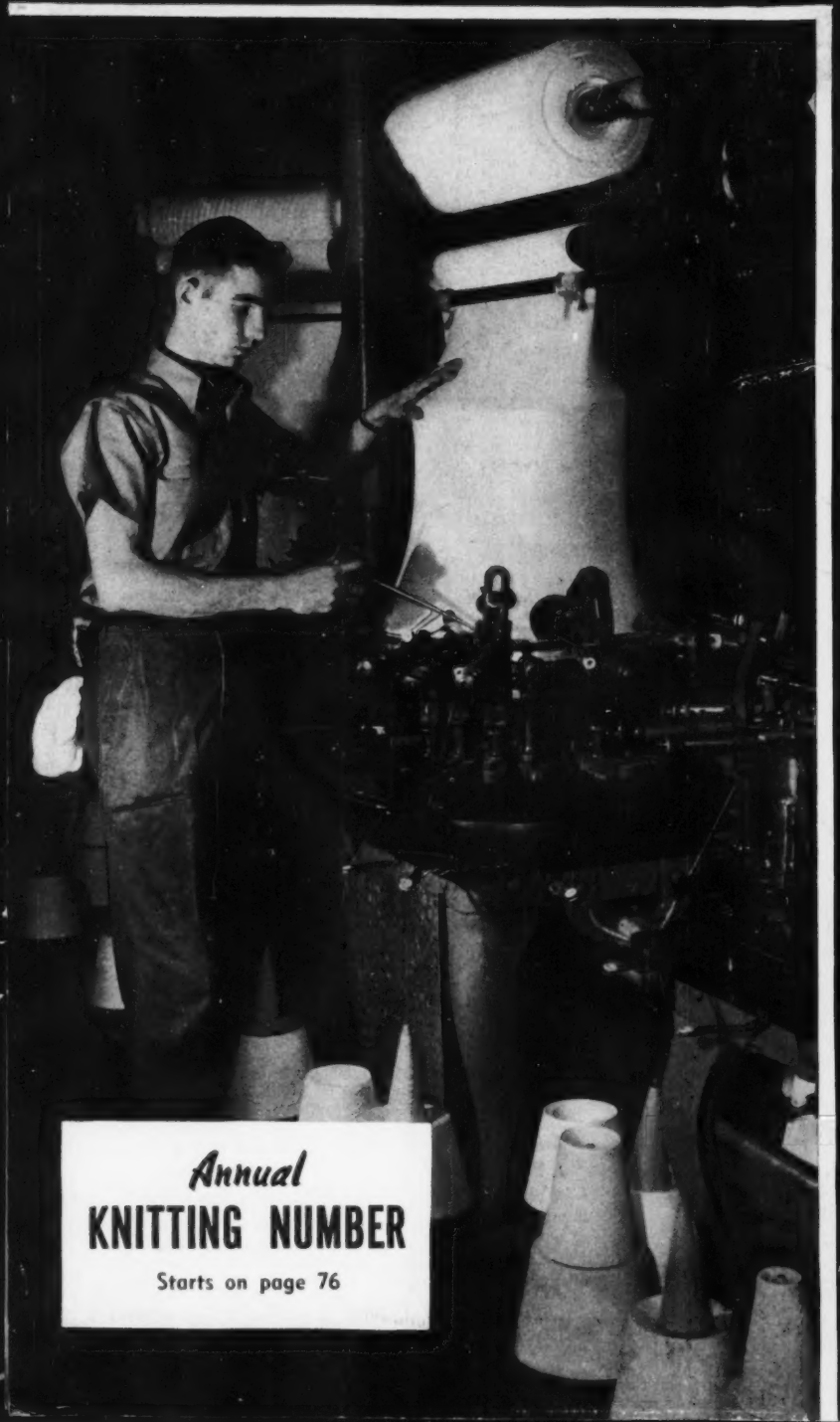
TEXTILE WORLD



Annual
KNITTING NUMBER
Starts on page 76

IN THIS ISSUE:

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PRICE 50 CENTS PER COPY
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You will want more than Cold Cash IN 1954

No matter which way things are heading in '54, your business will benefit if you ask yourself these two questions—and then act accordingly.

1 Have you recently looked at what your present source of ready capital gives you—beyond cold cash?

2 Have you fully considered what an alert factoring service can contribute toward increasing either your volume or profits as conditions warrant?

Here are a few facts about Commercial Factors Corporation's factoring service and the way it can help your business:

Credit Checking Service

A basic factoring service, like handling your bookkeeping and collection problem. But Commercial Factors Credit Service also keeps one eye cocked at your sales graph . . . looking for more desirable accounts . . . advising on elimination of undesirable accounts . . . spotting areas of greater potential for you. That's the positive side of credit checking!

Friendly Contact with Your Customers

Our credit men are on the road continuously, keeping in touch with many of your customers, helping to solve their problems, promoting good will for you.

Knowledge of Your Markets

It is C.F.C.'s policy to keep abreast or a little ahead of conditions in your markets. Your Sales Department can capitalize on this knowledge.

Knowledge of Your Production Problems

One result of our 125 years' experience is an understanding of the importance of gearing production to actual sales opportunities; i.e.: number of styles and proper quantities.

Contact Officers

C.F.C. staff officers of long experience are ready at all times to give this advice and counsel. This service goes far beyond basic factoring or credit checking.

A Commercial Factors Corporation representative can give you a more complete picture of how factoring can fit profitably into your business operation—and give greater force to your selling efforts.

Write or call one of the names listed below. No obligation, of course.

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Evanston, Illinois
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IN THE SOUTH
W. GILLIAM
3025 Hanson Place
Charlotte, N. C.
Charlotte 5-5452

TEXTILE WORLD, Vol. 104, No. 5, May, 1954. Published monthly with an additional issue in November McGraw-Hill Publishing Co., Inc., (Bragdon Lord & Nagle Division). Publication Offices, 99-129 North Broadway, Albany, N. Y. Editorial and Executive Office, 330 W. 42nd Street, New York 36, N. Y.
Subscriptions: Address correspondence to TEXTILE WORLD—Subscription Service, 99-129 North Broadway, Albany 1, N. Y., or 330 West 42nd Street, New York 36, N. Y. Allow ten days for change of address.
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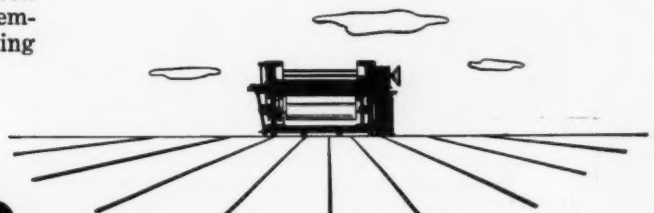
THE ATLANTIC CITY EXHIBITION again pointed up that Draper is retaining leadership through research.

Design changes reflect the continued efforts put forth for a flexible, durable, dependable loom with a low operating cost. Increased efficiency from machine and employee means savings to the mill operating new Draper looms.

Add Draper service and service technicians to these improved products and it is easy to foresee your next move. Your Draper representative will soon be calling. Let him explain these added values.



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A McGRAW-HILL PUBLICATION

Member of Associated Business Publications and Audit Bureau of Circulations

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THE *Long-Range* VIEW

What Management and Supervisors Want of Each Other

- **Superintendent is the key man**
- **He makes or breaks good relations**

There is some evidence that the relationship between top management and supervisors needs to be improved. Recently we have heard top-management men bemoaning the incompetence of supervisors, and we have on hand results of a study that indicate that management can stand a little brushing up on its own competence.

Undoubtedly the relationship between these two groups of men is the most critical in the textile industry. With due regard for such factors as business conditions, markets, financing, etc., we can say that the successful operation of a mill depends largely on the caliber of planning and execution of plans by this team of men.

What Management Wants of Supervisors

We could draw up a list of half a dozen or more important things that the top management of every mill wants. Some of these things would change from time to time as production and market demands change, but three things would be constant from year to year and from mill to mill:

1. Cut costs
2. Increase production per worker
3. Handle people better

It is almost certain that handling people more effectively is regarded as of top importance. The other two wants depend partly on machines and methods, but effective handling of people contributes greatly to those wants also.

The end result sought in handling people better is, of course, to get people to work better, more effectively, and more profitably. Management spends great amounts of time, thought, and money in working out policies and methods, setting up incentives, and training and coaching staff members in carrying out the policies; and nothing is more distressing to management than to see a good company policy wrecked by supervisor incompetence.

However, many supervisor incompetencies may be due to management fumbles. Before talking too much about supervisors falling short of expectations, management would do well to find out how far short it falls of what supervisors expect of management.

What Supervisors Want of Management

A study made by Opinion Research Corp. indicates that practically all supervisors everywhere have a strong desire to feel that they are part of management. A report on the findings states, "Universally, foremen report that they want more information about company policies . . . practices . . . and things that have to do with getting their own jobs done." For example:

67% want their company to discuss the big problems confronting the company and the nation.

54% want a company-sponsored training course in basic economics.

57% complain about company news reaching them first by the grapevine.

56% feel unable to discuss the company's business picture with their workers.

While this study covered foremen in several industries, there is no sound reason for thinking that the results would be far different in a study confined to the textile industry.

As is evident from the results listed here, management, on purpose or not, is holding supervisors at a distance. By being secretive, again purposely or not, management is maintaining a gap between itself and supervisors that contributes much to incompetence, misunderstanding, and misrepresentation.

Superintendent Is the Key

Since the superintendent is usually the top supervisor and the lowest participant in management, the problem of bridging the gap between the two groups of men is concentrated in him. Far too often he, rather than higher management, is jealous of the gap and instead of trying to close it makes certain that it continues to gape between himself and his supervisors.

Such a man is helping to perpetuate the ills in management-supervisor relationships. If he were of broader gauge himself, management would have less reason to bemoan supervisor incompetence and supervisors would feel less shut out from the company to which they devote their time, thought, and energy.

A. M. Thomas

these Helanca socks are "set for life" by TURBO Penetration

Turbo "penetration" is an exclusive feature of the Turbo line of special-purpose machines for heat-setting and steam-setting synthetic yarns, fabrics and garments. It's done by alternating cycles of pressure and/or vacuum. Timing is accurately and automatically controlled. Temperatures are accurately and automatically controlled. Forms and containers, as required, move in and out of the setting cabinet on a collapsible conveyor. With mill-tested and production-proved Turbo Machines there is no guess-work. Production is uniform and thorough.

Your setting problems can be solved by Turbo equipment now available, or designed to your particular requirements. Ask the Turbo Representative — there's absolutely no obligation. Clip and send the coupon for prompt attention.

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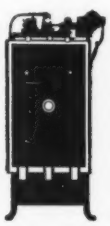
"Builders of Precision Machines for a Quarter Century"



Turbo Cabinet is adaptable for wet or dry heat, under pressure or vacuum. Automatic timing and controls take guess-work out of operation.

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☐ Sweater Setting ☐ Fabric Setting

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COMPANY .....

ADDRESS .....

If you need a drive for jobs like these—

WORLD'S LARGEST PAPER BAG MACHINE!

Equitable's New Machine Makes Longest Complete Bags In Single Operation!

Now... you can get paper bags up to 14 feet long ... singlewall or duplex ... printed in two colors!

Equitable's mammoth Machine #100 shown above, opens vast new fields for economical paper bag packaging. In one automatic operation it prints, forms a tube, completes a pasted-bottom closure, folds and counts the finished bags. The machine can also produce open-end tubes for sewn closure.

These sturdy super-long bags quickly solve packing problems for manufacturers of long and narrow products, such as rugs, textiles, wood and building products, insulation, plastics, knock-down kits, and many others. Note their advantages: 1) reduce costly labor required to wrap or bundle with paper, 2) eliminate expensive cartons and boxes, 3) permit faster and neater packing than by any other means formerly available, 4) brilliant two-color printing for product identification.

Can you pack YOUR product in a super-long paper bag?

Remember... if you can possibly use a paper bag, you will have the most economical package of all!

MACHINE RANGE

Styles ... Flat or gusseted, pasted bottoms or open end tubes.	*Minimum Length* ..... 30"
Number of Plies .... One or two.	*Maximum Face Width* ..... 20½"
Printing ..... One or two colors.	*Minimum Face Width* ..... 5"
Maximum Length ..... 169½"	*Maximum Circumference* ..... 74"

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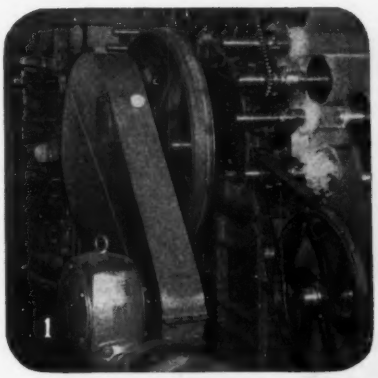
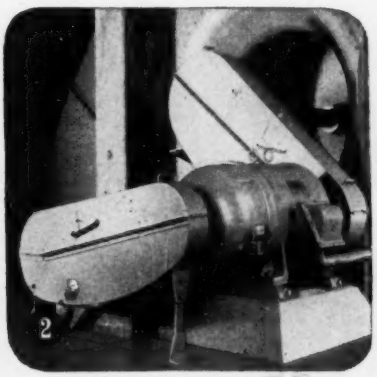
YOU'RE MONEY AHEAD

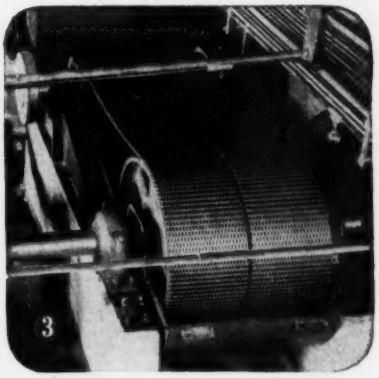
with LINK-BELT Silent Chain



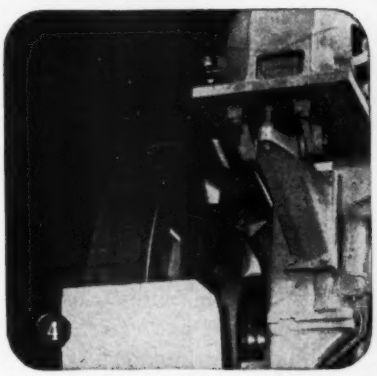
1 ADVERSE OPERATING CONDITIONS. Humidity, heat, cold do not lower Link-Belt Silent Chain's better-than-98% efficiency.



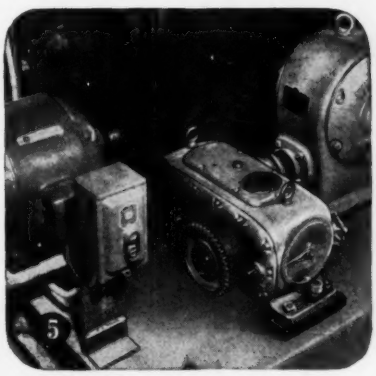
2 UNFAILING SAFETY. Dependability assures continued production. On above tunnel ventilators, Link-Belt drives protect human life.



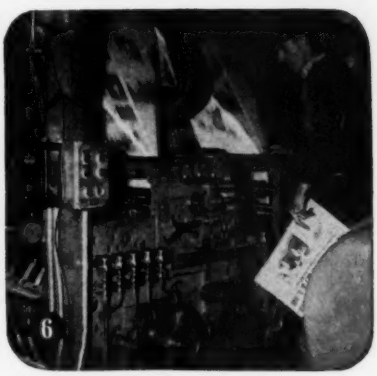
3 LARGE OR SMALL HP. A versatile line, Link-Belt Silent Chain drives are available from fractional to thousands of horsepower.



4 LARGE RATIOS. Link-Belt Silent Chain operates efficiently on extremely short centers at ratios as high as 10-to-1.



5 LIMITED SPACE. Easy to assemble in close quarters, Link-Belt Silent Chain permits built-in drives, compact housings.



6 HIGH SPEED. After 13 years on this newspaper press at speeds up to 4700 fpm, Silent Chain is still efficient.

Here's why Link-Belt Silent Chain Drives offer you more per dollar spent:

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- Longer life—trouble-free performance for 25 or 30 years is common.
- No dismantling machine or removing sheaves for repairs.
- Better than 98% efficiency.
- Maintained ratio assures full productive capacity.
- Slipless action assures a better product.
- Easy to install.
- Safe to employees—operates in oil-retaining casing.

For all the facts, see your Link-Belt distributor or factory branch store, or write for new Book 2425.

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LINK-BELT

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This Saco-Lowell Robbinette* Ring is suitable for cotton, wool, paper, glass and all synthetic fibers and blends. Robbinette* Rings break in rapidly and easily — and once in operation, they increase the life of the traveler and decrease the number of ends down per MSH.

Robbinette* Finish is now standard on all of our rings for both spinning and twisting without extra cost.

***A product of the Pawtucket Spinning Ring Company, the Ring Department of Saco-Lowell Shops.**

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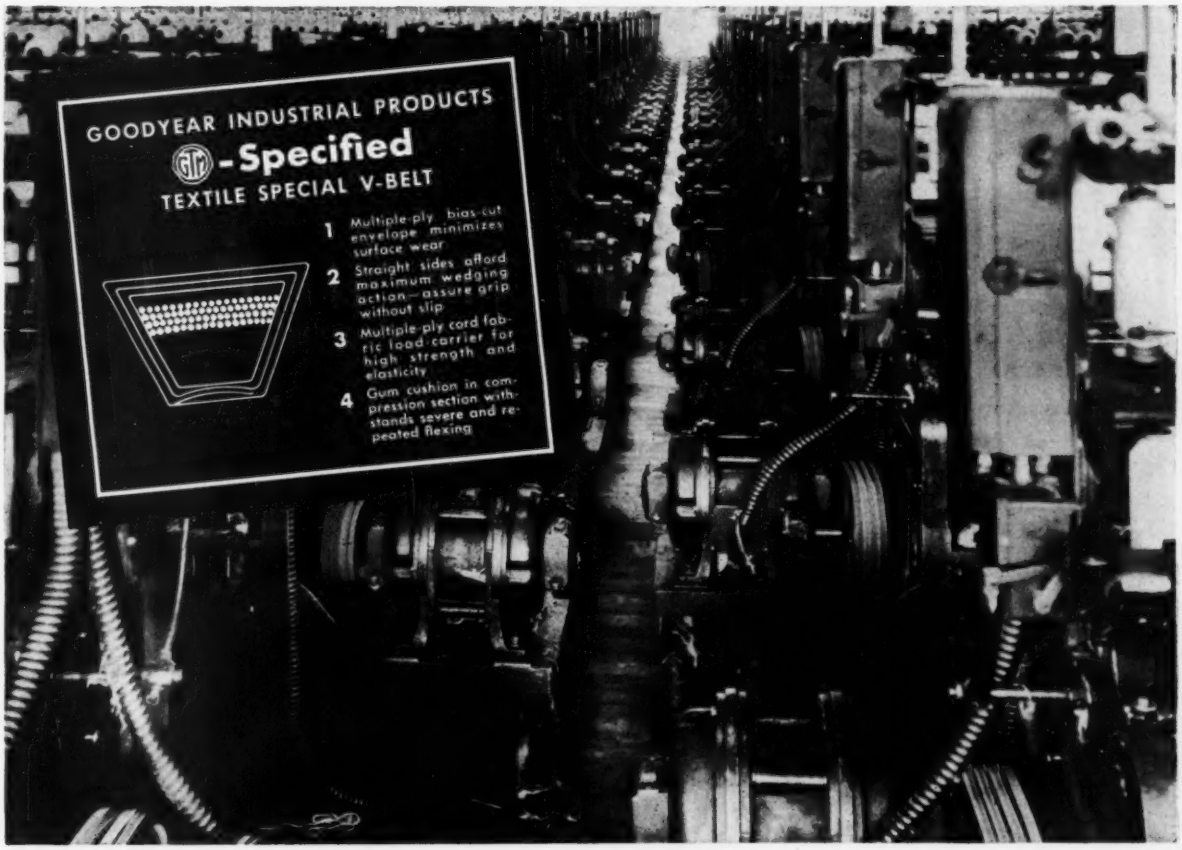
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G.T.M.-Specified
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2 Straight sides afford maximum wedging action—assure grip without slip
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BUILT TO DELIVER THE GOODS

—TEXTILE SPECIAL V-BELTS

MANY V-belted drives in textile mills suffer from severe overloads, high starting torques, frequent misalignment and occasional abuse. These conditions combine to produce uneven load-distribution and accelerated wear which result in early failure of most conventional belts.

To minimize these premature failures, the G.T.M.—Goodyear Technical Man—created the Textile Special V-Belt, muscled with multiple plies of cord fabric. This type of load-carrier gives the belt great strength plus enough elasticity to tolerate misalignment much more than other constructions. And the bias-cut fabric cover minimizes surface wear by transferring the load directly to the inner tension carrying cords.

Textile Special V-Belts are designed to deliver the goods for you. Their maximum service with minimum maintenance has been fully proved. One mill reports—"Outlives any belts we've tried." Another—"Less time lost for take-ups and adjustments." For details see your Goodyear Distributor, or the G.T.M. Or write Goodyear, Industrial Products Division, Akron 16, Ohio.

YOUR GOODYEAR DISTRIBUTOR *can quickly supply you with Hose, Flat Belts, V-Belts, Packing or Rolls. Look for him in the yellow pages of your Telephone Directory under "Rubber Products" or "Rubber Goods."*

GOODYEAR

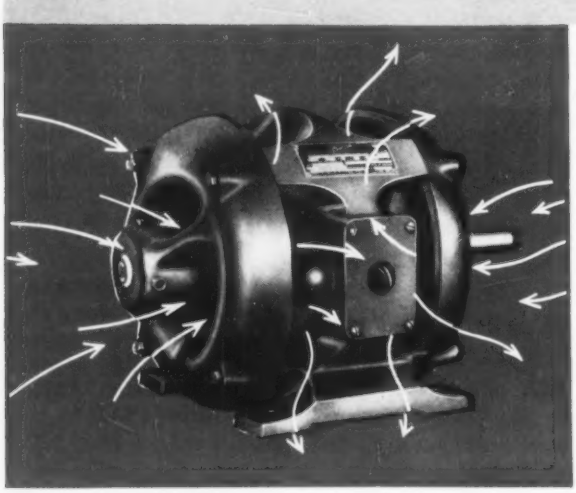
THE GREATEST NAME IN RUBBER

We think you'll like "THE GREATEST STORY EVER TOLD"—every Sunday—ABC Radio Network—THE GOODYEAR TELEVISION PLAYHOUSE—every other Sunday—NBC TV Network

Lint Won't Stop

Century Performance Rated© Textile Motors

- Lint, dust and other foreign matter are easily blown through the smooth, large, clean air passages.
- In lint-filled atmospheres, these motors stay clean, operate at normal temperatures. Bearings and windings are kept cool by large-capacity fans.
- Because they are Performance Rated to fit your job, Century Textile Motors deliver stand-out dependability year-in, year-out.
- Always specify Century Performance Rated Textile Motors.



Specify Performance Rated©

Century Motors!

Century makes a complete line of Performance Rated motors for important jobs in your mill. Power range from ⅛ to 400 H. P. . . . in a wide variety of types including drip proof, splash proof, totally enclosed and explosion proof. Selective speed drives 1 to 150 H. P.

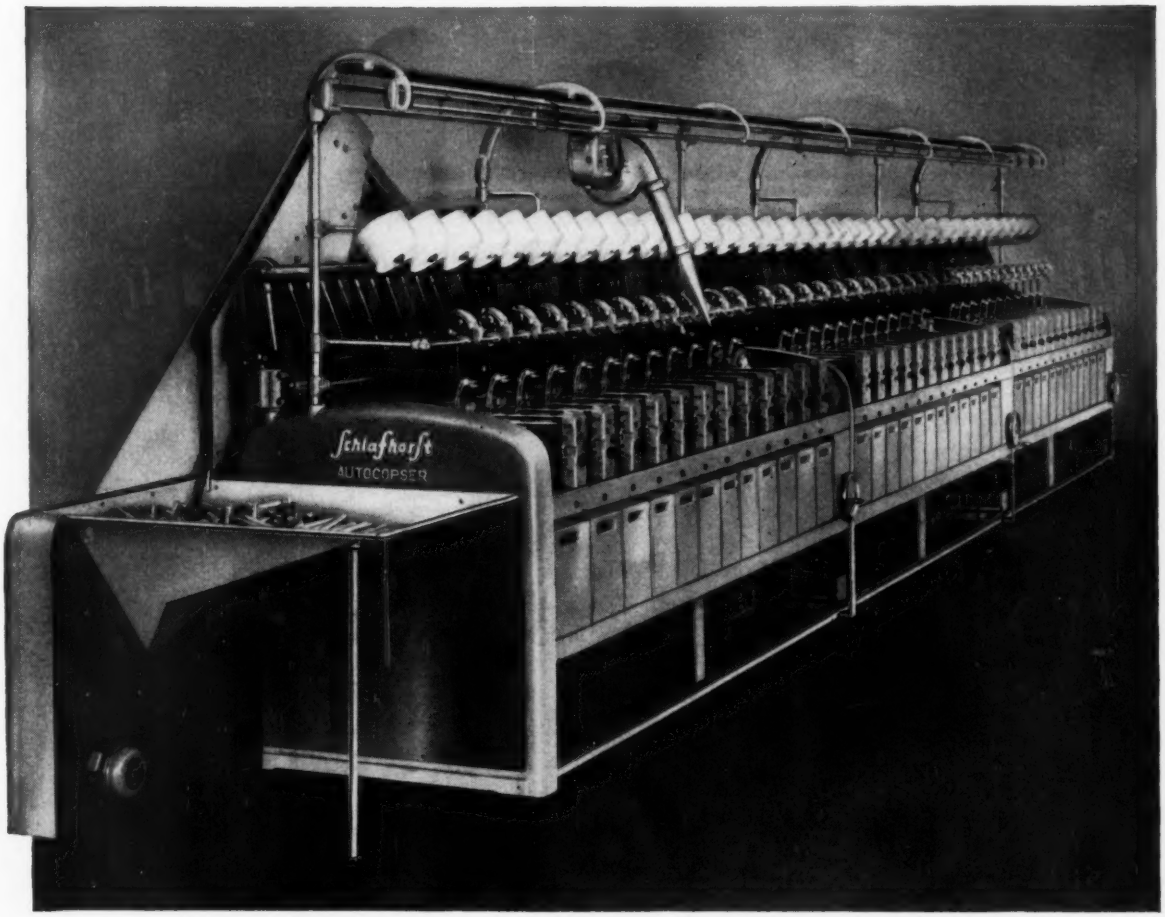
CENTURY ELECTRIC COMPANY

1806 Pine Street, St. Louis 3, Missouri

Offices and Stock Points in Principal Cities

Century C MOTORS

843



The above illustration shows our fully automatic quiller "AUTOCOPSER".

It is equipped with rotary yarn guides that have no oscillating parts. Quilling speed is limited only by the quality of the yarn and tube material used. To meet the requirements of high speeds up to 12000 revs per minute, the machine is very substantially built. Each quilling head functions independently, entirely unaffected by automatic change of pirns or by stoppages caused by broken ends.

The special shape of the groove of the rotary yarn guide ensures firm winding at the apex of the conical yarn layers, without danger of damaging the yarn. The grooved guide drum is of wear-resistant material and runs in a single one-sided bearing. It follows the build of the quill, and thus simplifies attendance by making the quill easily accessible at every stage of its formation.

Manual servicing is confined to filling the magazines or hoppers (as the case may be) with empty tubes, taking care of occasional broken ends, and to creeling fresh packages. Attendance is reduced to a minimum and simplified throughout.

Quills are firmly held in position between a live centre and a dead one so as to run smoothly and without vibration even at highest permissible speeds.

A novel feeler device controls the advance of the yarn guide by means of a continually revolving threaded rod that is positively driven. The slightest contact between a wide but light feeler roll and the yarn body immediately engages the yarn guide feed with the negligible application of an infinitesimal amount of power. This is achieved by means of an exceedingly simple gearless shifting device developed for this special purpose. The sturdy yet extremely sensitive mechanism has the sole functions of (1) *controlling the point* at which the steadily-turning threaded spindle must provide the necessary feed and (2) the *duration of time* for which this feed is continued.

Moreover, a continual displacement of the yarn layers is obtained by suitably utilizing the alternating feed and retractive shifts.

Upon contact between yarn body and feeler roll, the required lengthwise movement of the yarn guide is obtained each time. Since the feeler roll turns without rubbing against the yarn body, the most delicate yarns can be pirned without damage, at the highest speeds. Control of feed by the above-mentioned shifting device results in perfect pirns.

W. SCHLAFHORST & CO., M. GLADBACH, GERMANY

Schlafhorst

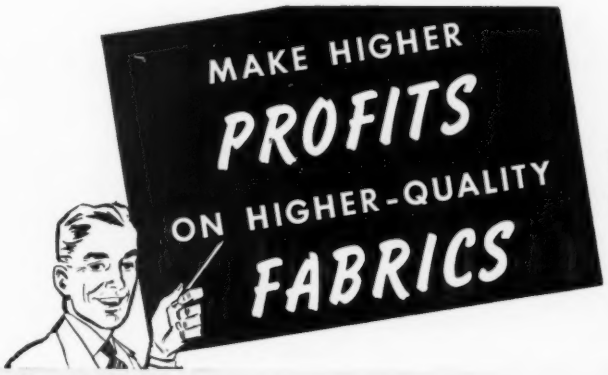
"You see POWELL VALVES everywhere!"

And no wonder! For The William Powell Company makes more kinds of valves and has probably solved more valve problems than any other organization in the world.

Wherever flow requires dependable control, there's the place for Powell Valves—famous for dependability since 1846. Made ⅛" to 30" and 125 pounds to 2500 pounds W. S. P. Bronze, iron, steel and corrosion resistant alloys. Available through distributors in principal cities. On problems, write direct to The Wm. Powell Company, Cincinnati 22, Ohio.

CONTROLS FOR THE LIFE LINES OF INDUSTRY

Powell Valves 108th year

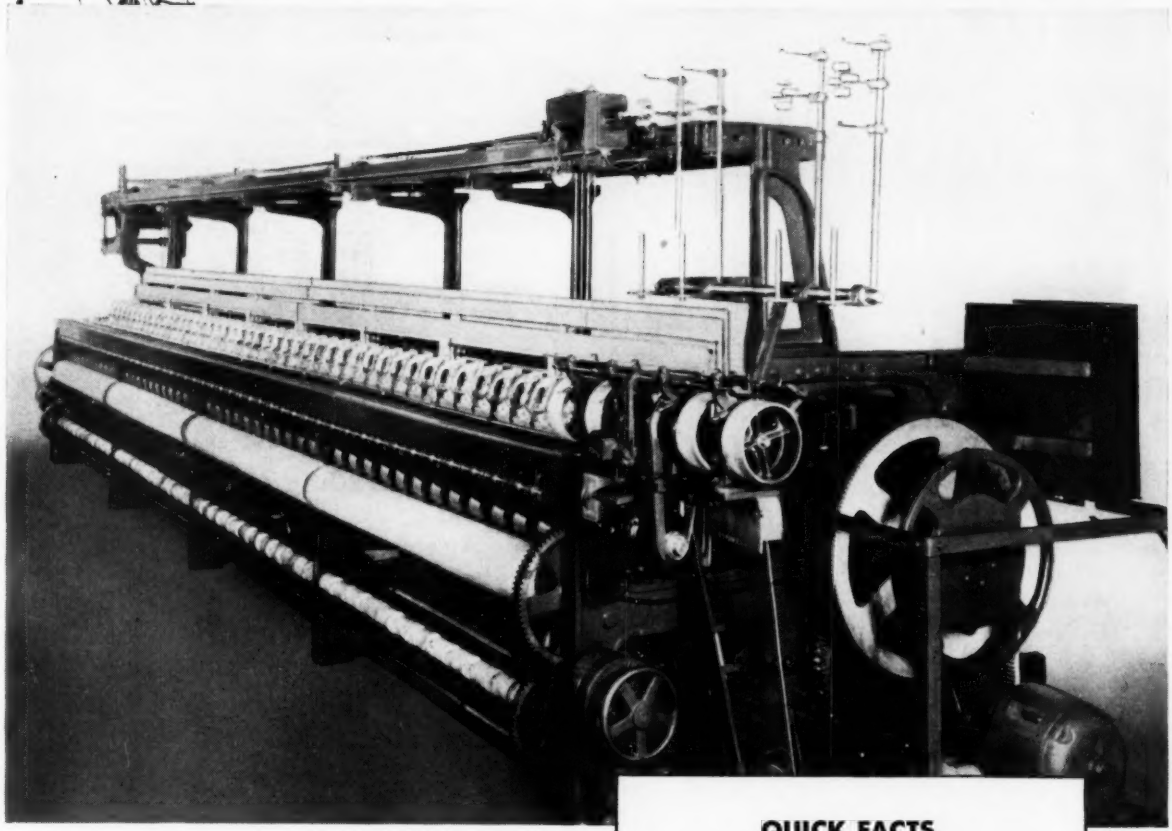


...with C&K's

Speedi-Weave

MULTIPLE-SHUTTLE

NARROW FABRIC LOOMS



Yes, you can achieve outstanding success in weaving narrow fabrics . . . by equipping your mill with C&K's modern Multiple-Shuttle Looms . . . the looms that produce far more marketable yardage at far lower cost.

C&K can build you the Narrow Fabric Looms that will weave *your fabric* the way you want it woven. Distances between loomsides can be varied to accommodate any number of shuttles and spacings . . . either single-deck circular, double-deck circular, single-deck straight, double-deck straight, straight-shuttle 2-bank cross-shot, or single-deck 2-bank straight drop-shuttle.

Never before in all the history of narrow-fabric weaving have there been looms with versatility equal to this!

QUICK FACTS
About Capacity and Operation

- **48 inches to 26 feet between loomsides**
- **6 spaces to 72 spaces**
- **Speeds of 120 to 306 picks per minute**
- **2 to 8 looms per weaver**
- **Loom efficiencies up to 90%**

Crompton & Knowles LOOM WORKS
WORCESTER 1, MASSACHUSETTS, U. S. A.
Philadelphia, Pa. • Charlotte, N. C. • Allentown, Pa.
Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I.

This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Fabrics . . . which are **WOVEN** Fabrics.

Augmenting Miller's Quality-Famous Line of "Custom-Built" Cylinders...

8 great features of the new '54 BAHAN LOOM provide new weaving innovations and economies

Check these improvements:

NEW HEAVIER CONSTRUCTION . . . 20% heavier total weight than looms of standard construction.

NEW BEARINGS . . . Now has 4 on camshaft, 5 on crankshaft. Heavier camshaft assures smoother pick.

NEW TYPE SHIPPER MOTION . . . more easily controlled — requires less starting effort. Eliminates wear.

NEW QUICK-ACTING BRAKE . . . improved positive action design always stops loom in correct position.

NEW MOTOR DRIVE . . . Bahan's sensational model D-1, never leaks grease on clutch.

NEW TYPE BEAM LOCK . . . more flexible and much easier to set than conventional locks.

NEW PICK MOTION . . . heavier construction and weight with adjustable stops.

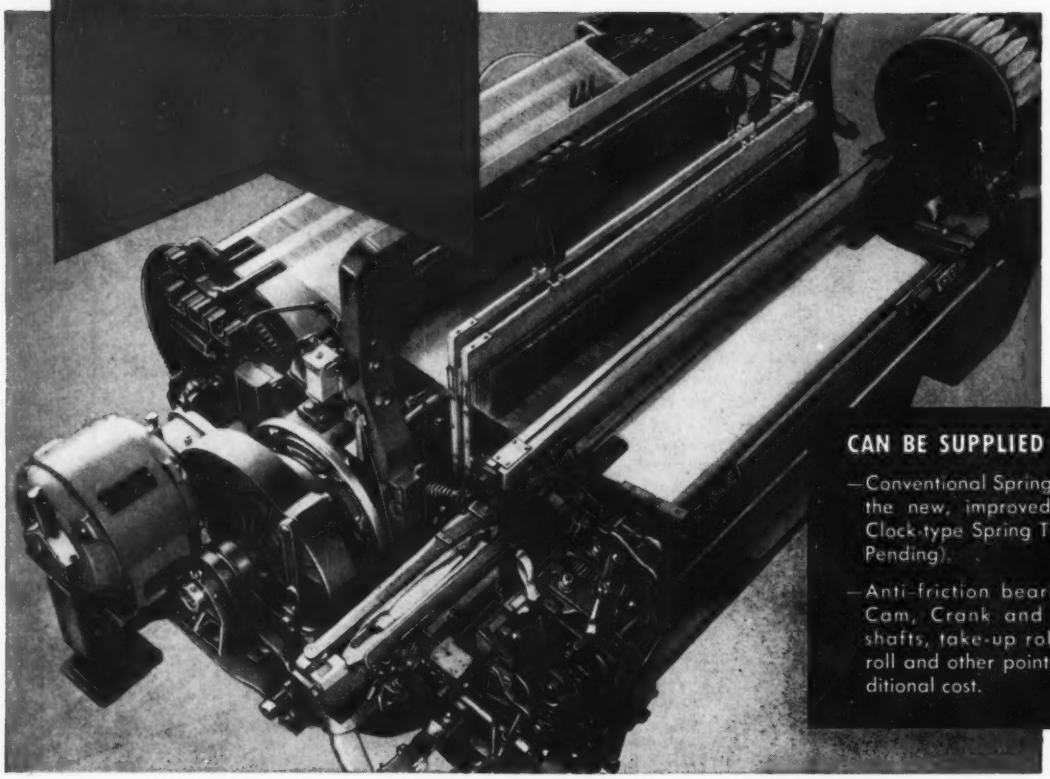
NEW PARALLEL MOTION . . . heavier and more rugged. Reduces wear, gives smoother sweep.

Machine Cut Gears Throughout!

FOR FULL DETAILS WRITE TODAY TO:

BAHAN TEXTILE MACHINERY CO.

GREENVILLE, SOUTH CAROLINA



CAN BE SUPPLIED WITH:

— Conventional Spring Top, or the new, improved Bahan Clock-type Spring Top (Pat. Pending).

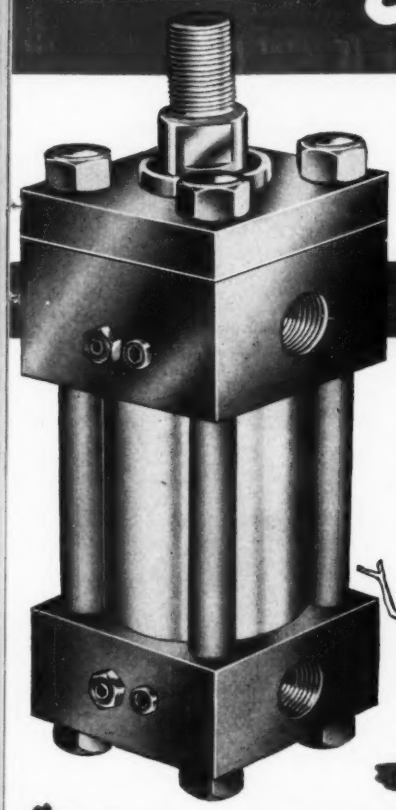
— Anti-friction bearings on Cam, Crank and Rocker shafts, take-up roll, whip roll and other points at additional cost.

Augmenting Miller's Quality-Famous Line of "Custom-Built" Cylinders...

Miller Stock AIR AND HYDRAULIC CYLINDERS

Available for *Immediate Delivery*...

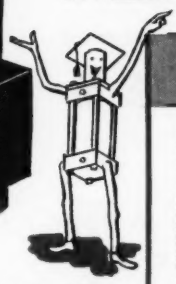
in the popular sizes, mountings and prices listed below



Any of the interchangeable "stock" mountings illustrated can be easily attached to Basic Model 53 with the tie rod nuts in a few moments. This gives you a wide selection of models for **immediate use**—and permits easy conversion to other models for **future re-use.** You save delivery and production time, investment cost and storage space.

ORDER DIRECTLY FROM THIS LIST...

"Stock" Cylinders are shipped as Basic Model 53. Your selection of Mounting Attachments are shipped (unattached) with cylinders. Prices are F.O.B. our plants.

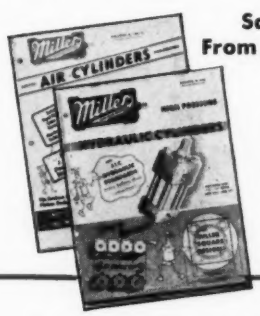


			BASIC CYLINDER PRICES ONLY		PRICES OF MOUNTING ATTACHMENTS ONLY					
			Basic Model 53 — Tie Rods Extended Rod End		Side or Foot Mounting (71)	Foot Mounting (77)	Rod End Flange (61)	Cap End Flange (62)	Rod End Flange (65)	Cap End Flange (64) / Pivot Mounting (86)
Bore	Stroke	Cushion	AIR A53	HYD. H53	AIR A77 A71	HYD. H77 H71	AIR A61 A62	HYD. H61 H62	AIR A86	HYD. H65 H66 H86
1½"	2"	Non		$58.50		$2.90		$8.20		$14.35
1½"	4"	Non		60.70		2.90		8.20		14.35
1½"	6"	Non		62.90		2.90		8.20		14.35
1½"	8"	Non		65.10		2.90		8.20		14.35
1½"	11"	Non		68.40		2.90		8.20		14.35
2"	2"	Non	$37.70		$2.05		$4.60		$6.90	
2"	4"	Non	39.40		2.05		4.60		6.90	
2"	6"	Non	41.10		2.05		4.60		6.90	
2"	8"	Non	42.80		2.05		4.60		6.90	
2"	11"	Non	45.35		2.05		4.60		6.90	
2"	3"	Both	62.05	94.50	2.05	2.95	4.60	8.55	6.90	17.05
2"	5"	Both	63.75	97.00	2.05	2.95	4.60	8.55	6.90	17.05
2"	7"	Both	65.45	99.50	2.05	2.95	4.60	8.55	6.90	17.05
2"	9"	Both	67.15	102.00	2.05	2.95	4.60	8.55	6.90	17.05
2"	13"	Both	70.55	107.00	2.05	2.95	4.60	8.55	6.90	17.05
2½"	2"	Non	41.45	73.30	2.25	2.95	4.80	9.00	7.55	19.80
2½"	4"	Non	43.35	76.00	2.25	2.95	4.80	9.00	7.55	19.80
2½"	6"	Non	45.25	78.70	2.25	2.95	4.80	9.00	7.55	19.80
2½"	8"	Non	47.15	81.40	2.25	2.95	4.80	9.00	7.55	19.80
2½"	11"	Non	50.00	85.45	2.25	2.95	4.80	9.00	7.55	19.80
3¼"	3"	Both	77.80	126.85	2.55	4.35	6.35	11.75	9.90	23.10
3¼"	5"	Both	79.80	129.85	2.55	4.35	6.35	11.75	9.90	23.10
3¼"	7"	Both	81.80	132.85	2.55	4.35	6.35	11.75	9.90	23.10
3¼"	9"	Both	83.80	135.85	2.55	4.35	6.35	11.75	9.90	23.10
3¼"	13"	Both	87.80	141.85	2.55	4.35	6.35	11.75	9.90	23.10
4"	2"	Non	56.25	106.00	2.85	5.15	6.70	12.90	11.05	26.80
4"	4"	Non	58.85	109.40	2.85	5.15	6.70	12.90	11.05	26.80
4"	6"	Non	61.45	112.80	2.85	5.15	6.70	12.90	11.05	26.80
4"	8"	Non	64.05	116.20	2.85	5.15	6.70	12.90	11.05	26.80
4"	11"	Non	67.95	121.30	2.85	5.15	6.70	12.90	11.05	26.80
5"	3"	Both	98.25		3.15		7.00		12.35	
5"	5"	Both	101.65		3.15		7.00		12.35	
5"	7"	Both	105.05		3.15		7.00		12.35	
5"	9"	Both	108.45		3.15		7.00		12.35	
5"	13"	Both	115.25		3.15		7.00		12.35	
6"	2"	Non	80.60		3.35		7.25		13.55	
6"	4"	Non	84.90		3.35		7.25		13.55	
6"	6"	Non	89.20		3.35		7.25		13.55	
6"	8"	Non	93.50		3.35		7.25		13.55	
6"	11"	Non	99.95		3.35		7.25		13.55	
8"	3"	Both	157.35		3.70		10.55		17.60	
8"	5"	Both	162.45		3.70		10.55		17.60	
8"	7"	Both	167.55		3.70		10.55		17.60	
8"	9"	Both	172.65		3.70		10.55		17.60	
8"	13"	Both	182.85		3.70		10.55		17.60	

Miller "Stock" Cylinders fully meet the J.I.C. Standards and are identical to Miller "Custom-Built" Cylinders in design and construction.

"Stock" Air Cylinders are for 200 psi operation, "stock" hydraulic cylinders for 2000-3000 psi operation. Piston Rods of "Stock" Cylinders are "Style No. 2 Standard."

For complete descriptive and dimensional data on both "Stock" and "Custom-Built" Miller Cylinders, write for Bulletins A-105 and H-104 sent FREE on request.



Sales and Service From Coast to Coast!

Consult your local directory or write us direct for the name of our representative for your area

Complete Miller "custom-built" line includes: air cylinders, 1½" to 20" bores, 200 psi operation; low pressure hydraulic cylinders, 1½" to 6" bores for 500 psi operation, 8" to 14" bores for 250 psi operation; high pressure hydraulic cylinders, 1½" to 12" bores, 2000-3000 psi operation. All mounting styles available. Also, a complete line of Fluid Pressure Boosters and Accumulators.

MILLER FLUID POWER CO.

(Formerly MILLER MOTOR COMPANY*)*

Miller

2002-06 N. Hawthorne Ave., Melrose Park, Ill.

AIR & HYDRAULIC CYLINDERS • BOOSTERS • ACCUMULATORS
COUNTERBALANCE CYLINDERS

if you want lower V-Belt costs—

When a V-Belt bends, you can feel its sides change shape.

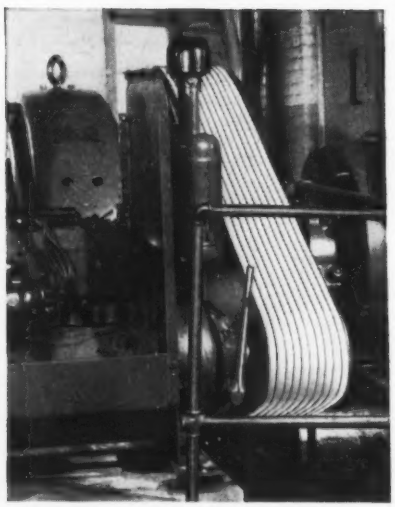
just make this simple test

Take *any* V-belt that has *straight* sides (Fig. 1). Bend that V-belt while you grip its sides with your fingers. You will *feel* the sides *bulge out* (Fig. 1-A). Clearly, that out-bulge forces the belt to press *unevenly* against the V-pulley—and this *concentrates* wear at the points shown by arrows (Fig. 1-A).

Now bend a Gates Vulco Rope with CONCAVE SIDES (Fig. 2)

(U.S. PAT. NO. 1813698)

Instead of *bulging,* the precisely engineered CONCAVE SIDES merely *fill out* and become perfectly straight. This belt, when bent, *precisely fits* its sheave groove (Fig. 2-A). The sides of the Gates Vulco Rope press *evenly* against the V-pulley. Therefore, wear is distributed *uniformly* across the *full face* of this belt —resulting in *longer* belt life and *lower* belt *costs* for you!



Typical Gates Vulco Rope Drive —the Gates V-Belts are built with Concave Sides to insure longer belt wear.

When you buy V-belts, be sure to get the V-belt with the Concave Sides—the Gates Vulco Rope!

Gates VULCO ROPE DRIVES

REG U.S. PAT. OFF.

Gates Engineering Offices and Jobber Stocks are located in all industrial centers of the United States and Canada, and in 70 other countries throughout the world.

THE GATES RUBBER COMPANY
DENVER, U.S.A.

CS-543

For more information, write direct or use Reader Service post card.

2000-3000 psi operation. All mounting styles available. Also, a complete line of Fluid Pressure Boosters and Accumulators.

AIR & HYDRAULIC CYLINDERS • BOOSTERS • ACCUMULATORS
COUNTERBALANCE CYLINDERS

exceptional all-around fastness, rain or shine

NATIONAL

Carbanthrene Brilliant Violet RK

DOUBLE PASTE

In full and medium shades, this bright, bluish-violet National Vat has maximum light-fastness. In pastels, it rates "excellent". It has very good-to-excellent fastness to commercial laundering, boiling soap and soda, chlorine, stoving, cross dyeing, acids, perspiration, sea water and crocking. Additionally, it is suitable for fabrics that are to be resin finished or rubberized.

Possessing very good solubility, National Carbanthrene Brilliant Violet RK can be applied in all type machines, by the various pigment impregnation techniques as well as the reduced dyeing method. For properties, samples and prices, write or phone our nearest office.

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ALLIED CHEMICAL & DYE CORPORATION
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Boston Providence Philadelphia Chicago San Francisco
Portland, Ore. Greensboro Charlotte Richmond Atlanta
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Executive and General Offices

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Telephone: Murray Hill 3-8650

FACTORS

For Manufacturers and Merchants

Inquiries as to our services solicited

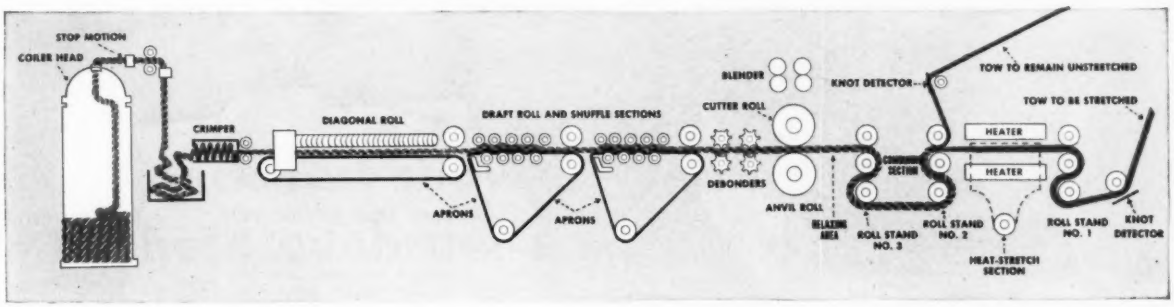
●

BUSINESS ESTABLISHED 1840

NEW IMPROVED CONVERTER

Featuring

1. New controlled heat-stretch process for Orlon!
2. New in-feed section—reduces snap-backs, improves quality of sliver!
3. New coiler head for better, more uniform packaging!



❸ ❷ ❶

Now, with this new improved Warner & Swasey-Pacific Converter you have a *single machine* that converts *all* types of synthetic tow to sliver—including Orlon—and accurately blends synthetics or natural fibers.

NEW HEAT-STRETCH UNIT FOR ORLON gives you *controlled shrinkage.* You can now determine *in advance* how much stretch to give the tow for the desired end product. It gives you direct proportionate blending of tow, without any extra equipment. Production remains high—from 100 to 130 lbs. per hour. This new heat-stretch unit can be added to all existing Warner & Swasey-Pacific Converters.

NEW IN-FEED SECTION, with three sets of rolls, keeps tow under constant tension until it reaches the relaxing area at the cutter roll... maintaining a more uniform length of staple.

NEW COILER HEAD gives you more uniform, heavier packages—improves handling on subsequent operations. Yardage counter provides positive control for exact amount of sliver in each can. Speed of take-up can be varied while Converter is in operation.

But let our nearest Field Representative give you the complete facts about this new Converter. Call him in today!

SALES OFFICES

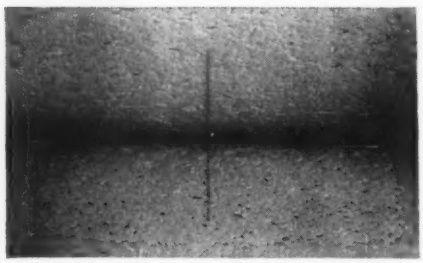
Main Office and Factory:
5701 Carnegie Ave., Cleveland 3, Ohio
61 Rivulet St., North Uxbridge, Mass.
6910 Market St., Philadelphia, Pa.
Candler Building, Atlanta, Ga.
1820 Browning Ave., Charlotte, N. C.

YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS WITH WARNER & SWASEY MACHINE TOOLS, TEXTILE MACHINERY, CONSTRUCTION MACHINERY

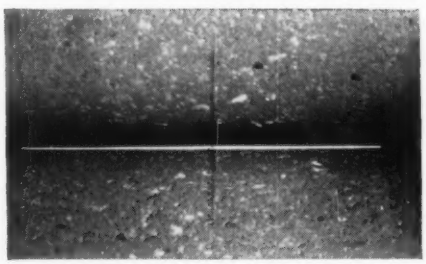
See for yourself

COTS NEED RE-BUFFING? Make a quick check by holding two rolls together against the light. Close-ups below picture what you should—and shouldn't see.

HOW DO YOUR COTS LOOK WHEN YOU HOLD THEM UP TO THE LIGHT?



O. K. These Armstrong's NO-742-S Cots have been on the frame 11 months, yet need no rebuffing. Performance like this has convinced mill men that the NO-742-S stops serious eyebrowing, requires only a minimum of re-buffing to maintain yarn quality.



NEEDS RE-BUFFING. If your inspection shows that cots are hollowing out or grooving prematurely, they're probably not controlling yarn so well as they should. Install NO-742-S Cots for minimum re-buffing and maximum eyebrow resistance.

These photographs are 5½ times actual size.

ARMSTRONG'S

how Armstrong's NO-742-S Cot

RESISTS GROOVING

SPINS QUALITY YARN

Quick test shows how much longer these eyebrow-resistant cots wear

For a fast, on-the-spot check on how well your cots are wearing, try this:

Take two rolls off your frames, put them together cover to cover, and hold them up to the light. If you can see daylight between them, your cots probably are not giving you good yarn control. Because this test shows double the actual wear, it gives a magnified view of any hollowing or grooving and helps you detect premature cot failure.

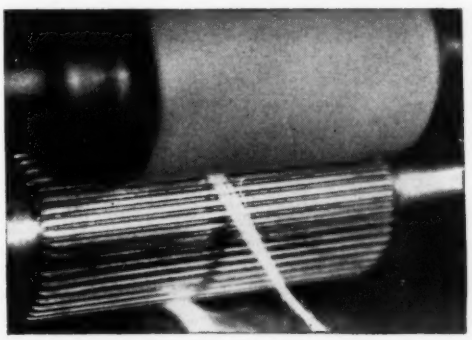
One of Armstrong's customers who made this test told us afterwards, "I was pleased to discover I couldn't see a bit of light between Armstrong's NO-742-S Cots. They'd been in constant use for almost a year and **still didn't need re-buffing!** They were running exceptionally clean, without slicking or glazing."

In most spinning rooms, NO-742-S Cots keep their high-friction "bite" for months. In fact, re-buffing is seldom necessary before the cots have run a year.

Controls eyebrowing. Armstrong's newest Accotex® cot has been mill-tested for over two years on all types of spinning equipment and on many different types of yarn. In every test, results were the same. NO-742-S Cots eliminated eyebrowing as a serious problem.

The thousands of tiny "teeth" on the spinning surface of this lap-resistant cot do the trick. They pick up the waste fibers and pack them well back on the clearers where they belong. As one mill man put it, "I can pick out the rolls covered with these new cots without ever lifting a clearer board. When all the others have eyebrows these new ones don't!"

Ask your Armstrong man about this new NO-742-S Cot. He'll be glad to get you samples for your own spinning frames. Write Armstrong Cork Company, Textile Products Department, 6505 Dauphin St., Lancaster, Penna. These new Accotex cots are available for export.



WITH REVOLVING CLEARERS, USE THE LAP-RESISTANT J-490 COT

For spinning fine yarns, and for any count yarn with revolving clearers, Armstrong's J-490 Accotex Cots have proved ideal in hundreds of mills. Special electrolytes added to the J-490's long-wearing synthetic rubber composition make it highly resistant to lapping. The J-490 runs exceptionally clean, too. If lapping's a problem, call your Armstrong man today and arrange for a test side of J-490 Accotex Cots.

ACCOTEX COTS — NO-742-S • J-490 • NC-727

The WHITIN Superflex SPINNING FRAME

...with the WHITIN Two-Apron Super-Draft System

Unequalled

...for QUALITY of yarn produced

...for FLEXIBILITY

...for all-round PERFORMANCE

The Whitin Superflex spinning frame is a streamlined model that utilizes every feature that has proved its worth in mill operation as contributing to *profitable* spinning. Whitin, with nearly 110 years' experience in manufacturing spinning frames, confidently presents the SUPERFLEX spinning frame for producing highest quality yarn at the lowest possible cost, and for most efficient all-round performance from the coarsest to the highest counts of cotton and spun rayon yarns.

The heart of the spinning frame is the drafting system. The Whitin two-apron SUPER-DRAFT System is recognized by the textile industry as being so desirable that among modern drafting systems it is used on more spindles in the United States than any other, and probably on more than all other modern competitive drafting systems together. The frame is 39" wide. The gauge can be from 2¾" - 5". The traverse is 11" and can be adjusted down to 8" providing complete flexibility for future changing operating conditions.

The proof of the worth of any spinning frame is to be found not in claims but in actual mill performance. Whitin suggests that you investigate by asking men who operate or supervise spinning frames. You will discover what most leading mills of the Americas already know from experience — that for the best in spinning, it's Whitin.

For comprehensive descriptive literature write to Dept. A, Whitin Machine Works, Whitinsville, Mass., or consult your nearest Whitin representative.

Whitin MACHINE WORKS

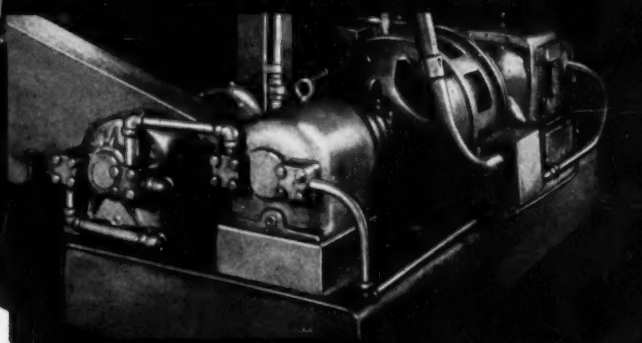
WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

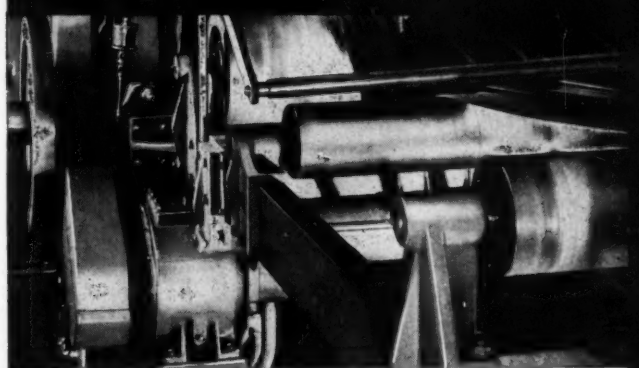
For more information, write direct or use Reader Service post card.

Saves Time, Money, Material

ON CHICAGO CARTON COMPANY LAMINATING MACHINE



AND CUT-OFF



Oilgear drive installed in 1934 operates 16 hours daily at low cost. Gives maximum production on all stocks with little spoilage or non-productive time

A laminating machine and a cut-off in the plant of the Chicago Carton Company are driven in synchronism by Oilgear Fluid Power Equipment installed in 1934. A trip to the plant reveals today the compact, sturdy Oilgear equipment on the lower floor performing quietly, efficiently and continuously 16 hours a day in the necessarily humid atmosphere. Maintenance records indicate a total expenditure of $93.21 during the 16 years for service and parts, less than $6.00 a year. Because of the full flexible speed range and easy controllability of the Oilgear drives, the laminating machine is operated at speeds that best fit the type of board being processed and the cut-off drive follows in synchronism to cut stock into uniform lengths.

Another Oilgear feature important here is the unusual speed with which the laminating machine drive and cut-off drive can be started and stopped. This feature of Oilgear smooth, high speed acceleration and quick hydro-dynamic braking reduces non-productive time and cuts spoilage of sheets to a bare minimum.

On the basis of the 16 year performance of Oilgear, the Chicago Carton Company recently installed another Oilgear drive on a new 125 hp installation.

Time after time, Oilgear demonstrates its superiority and dependability on variable speed drives. Oilgear Fluid Power has many advantages. Investigate them now. THE OILGEAR COMPANY, 1577 W. Pierce St., Milwaukee 4, Wis.

UPPER—Oilgear 40 hp Variable Speed Drive with electric pilot motor remote control and oil reservoir base.

LOWER—Oilgear 7½ hp Variable Speed Drive with automatic control to synchronize cutter speed with speed of laminating machine drive.

Oilgear

PIONEERS IN FLUID POWER

PUMPS, TRANSMISSIONS, CYLINDERS AND VALVES

Tests prove you get better, more

New DAYCO

You'll benefit *ten* ways when you equip your slashers with new Dayco *Thoro-Size* Slasher Rolls that give more uniform sizing in less time, at less cost.

Test-proved in the mill, Daycos give consistently finer sizing for longer yarn runs and pay for themselves in savings in 6 months to a year. Then they continue to serve efficiently, economically for years to come, multiplying your savings all the time.

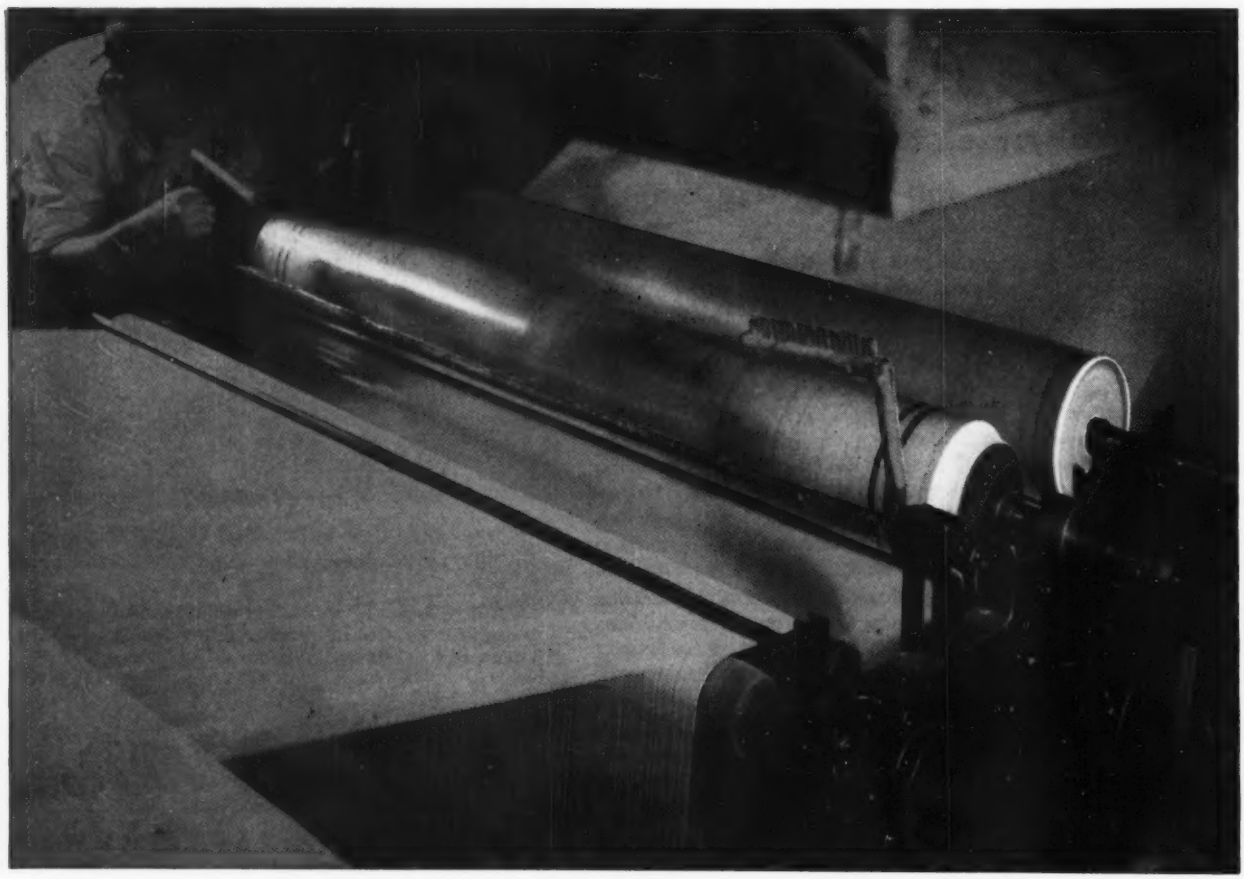
For proof of Dayco's truly superior performance, you have but to glance at the photos on the opposite page. The top photo reflects clean warp yarn uniformly sized by Dayco Thoro-Size Slasher Rolls. Lower photo shows irregular sizing applied by ordinary slasher rolls.

Primarily developed for sizing cotton or cut staple yarns, Dayco Thoro-Size Slasher Rolls accurately control the dressing within desired limits.

Product of Dayton Rubber Company's Research Plant at Waynesville, N. C., Daycos were eleven years in making Extensive testing of the rolls — in the laboratory and in the field — followed to make sure their performance would measure up to other outstanding Dayton products such as Dayco Thoro-Checks, Dayco Lug Straps and Dayco Loop Pickers. No detail has been overlooked by Dayton's laboratory technical staff in making these new rolls the most efficient, most economical you can buy.

Dayco Slasher Rolls withstand the effects of sizing solutions, eliminate the use of slasher cloth or blankets, and, by doing so, save valuable time and money.

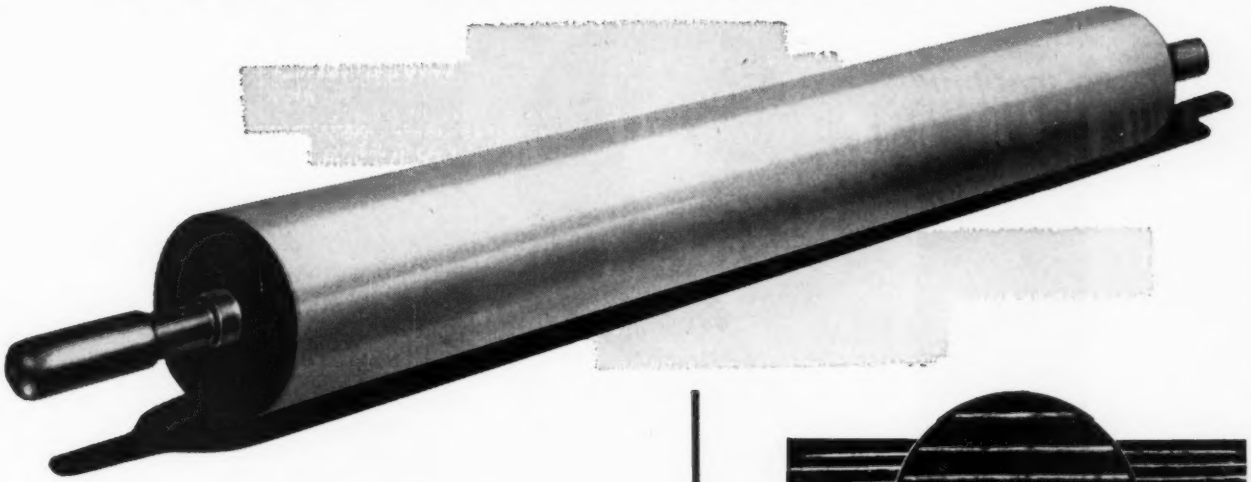
Thoro-Size Slasher Rolls retain their resilience over long periods of time, provide a smooth surface with no seams to streak or spot the yarn. Moreover, they give years of trouble-free service and can be resurfaced again and again for double and triple life.



OILGEAR COMPANY, 1577 W. Pierce St., Milwaukee 4, Wis.

uniform sizing with

Thoro-Size Slasher Rolls

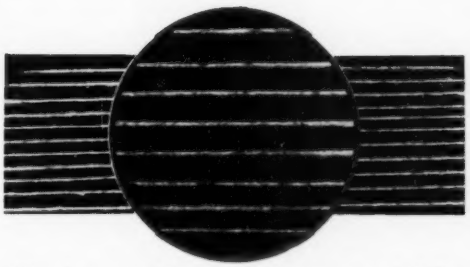


You Benefit Ten Ways by Using DAYCO Thoro-Size Slasher Rolls

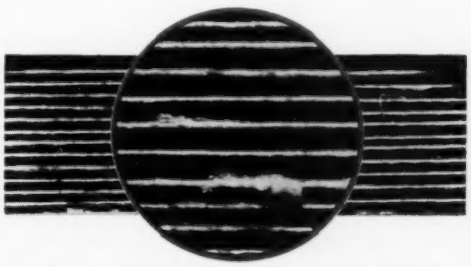
DAYCO Thoro-Size Rolls —

- Pay for themselves in 6 months to a year
- Greatly increase the uniformity of sizing
- Retain their resilience, require no covering
- Do not groove, have no seams, leave no roll marks
- Dress the yarn exactly as desired — no harsh surface to add problems
- Reduce waste of sizing when starting new sets
- Do not have to be removed when changing sets
- Are not affected by oils or chemicals
- Embody unusual properties for removing excess starch from warp yarn
- Can be resurfaced for double and triple life

For complete money-saving details clip and mail the coupon today!



Here is a magnified section of warp yarn sized by new Dayco Thoro-Size Slasher Rolls. Note clean, uniform appearance throughout.



Warp yarn from the same mill sized by ordinary slasher rolls. Note uneven and irregular sizing along the yarn denoting lack of adequate control.

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Textile Products for Better Spinning and Weaving

Dayton Rubber Company, Textile Division
Woodside Building, Greenville, S. C.

Dayton Rubber Co., Textile Division, Dept. 344
Woodside Bldg., Greenville, S. C.

Send complete information on Dayco Thoro-Size Slasher Rolls without obligation

*Name*_____

*Mill Name*_____

*Address*_____

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HORGEN - Zurich (Switzerland)

Reduce **WINDING** *costs*
with Schweiter KM Vario Coners

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1

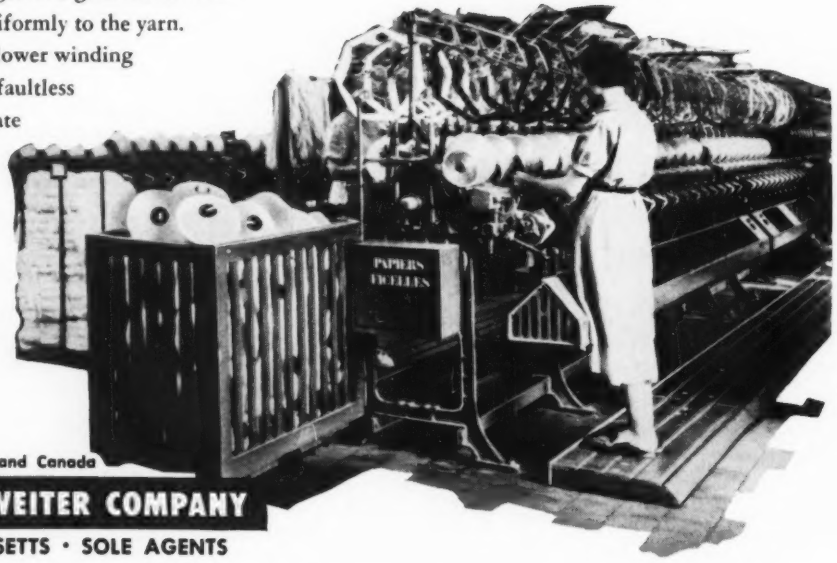
2

no tangling

3

no stretching

● Schweiter KM Type Vario Coners silently wind a knotless yarn to the famous Schweiter Vario Cones without waste. The exclusive tension control and automatic stop motion for yarn entanglement in the skein prevent stretched yarn and yarn breakage. The gear driven waxing device applies more wax uniformly to the yarn. The result is perfect knitting at lower winding cost and volume production of faultless cones—even with most delicate yarns."



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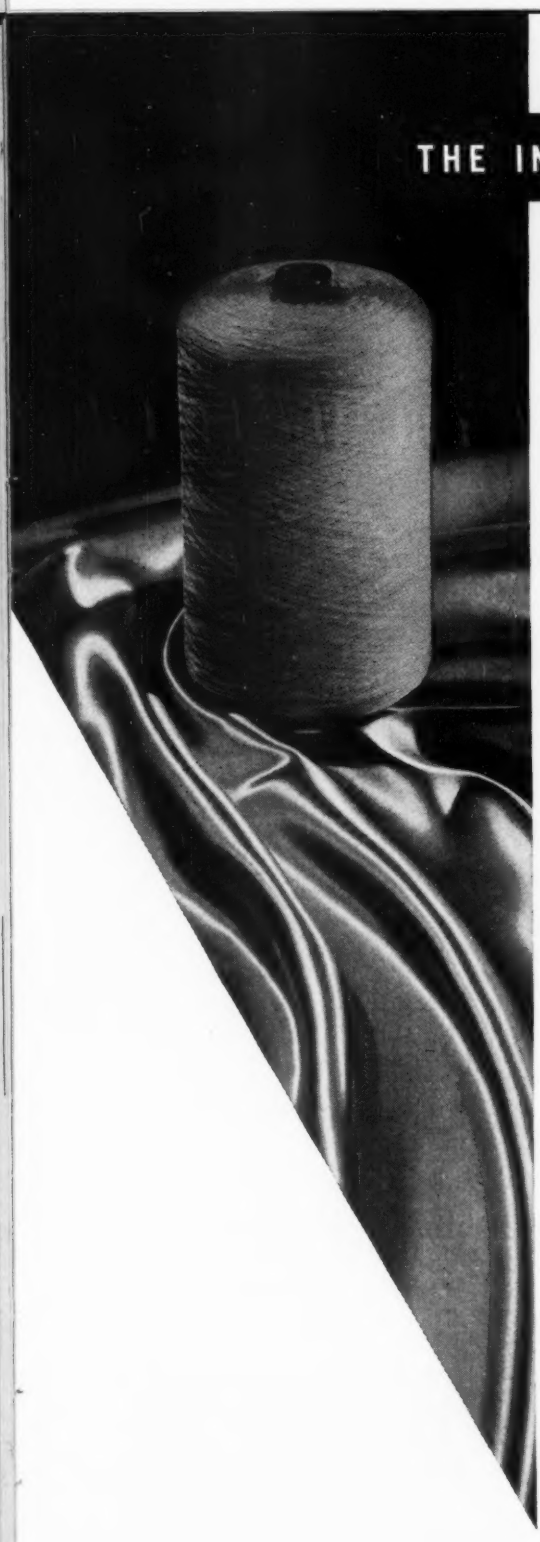

THE INDUSTRY ASKED FOR:

Levelness and good penetration in package dyed woolen and nylon yarns

Sandoz supplied the answer:

EKALINE F

EKALINE F, a nonionic dyeing assistant developed by Sandoz, is especially effective in package dyeing woolen yarns and nylon yarns. Excellent migration is obtained through its use, resulting in good penetration and levelness.

A nonionic fatty polyethylene glycol ether, EKALINE F is applicable on all fibres and stable to strong acid or alkali at the boil. It is compatible with anionic, nonionic and cationic compounds. EKALINE F has proved effective when used with Xylene Fast "P" colors, Brilliant Alizarine Milling colors, Lanasyn dyestuffs and Sandonyl dyestuffs.

Applications: In addition to package dyeing, EKALINE F is useful in many other specific dyeing applications. For example, hosiery dyers using acetate colors for nylon full-fashioned hose also find EKALINE F a great help in obtaining a good union between the multifilament welt and the mono-filament boot even at high temperatures.

Another interesting application is in the dyeing of woolen fabrics containing viscose decorations. These can be dyed with Vitrolan colors by adding 1% EKALINE F to replace approximately one half of the usual amount of sulphuric acid.

For full details and additional application data, write for your free EKALINE F folder. Sandoz branches are in Hudson, Mass.; Providence; Fairlawn, N.J.; Philadelphia; Charlotte; Cincinnati; Los Angeles; Montreal; Toronto. Sandoz Chemical Works, Inc., 61 Van Dam Street, New York 13, N.Y.

B.3.5

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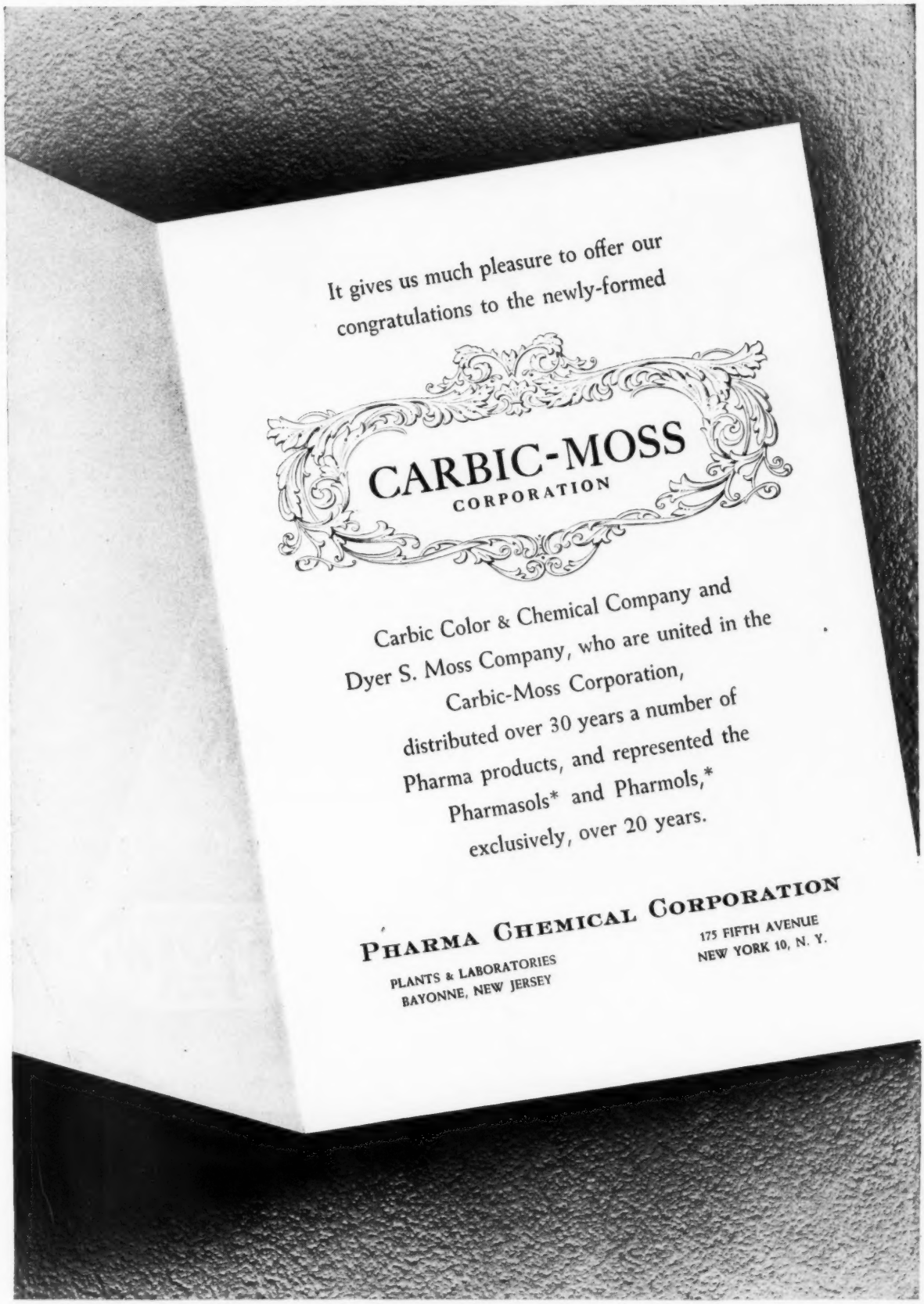
It gives us much pleasure to offer our
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Another new development using

B. F. Goodrich Chemical *raw materials*

B. F. Goodrich Chemical Co. does not manufacture these cotton picking bags. We supply the Geon paste resin only.

Cotton picking bag has wonderful drag

COTTON picking bags have a short life as you will see why. When full they hold 65 pounds of cotton, and as the picker drags it over stone and earth the wear is extreme—and costly.

The bag manufacturer came up with an idea that gives this cotton picking bag 3 times the wear of the ordinary bag. He coats the outside with a plastisol based on Geon paste resin, which covers the bag with flexible armor that resists dragging action. Furthermore, it is not affected by the 100° heat common to cotton country—this plastic coating won't peel or chip.

You may find an idea in this success story that can help you improve or develop more saleable products. For Geon-based plastisols and other Geon materials have helped build sales for many necessities—such as wire insulation, durable flooring, colorful upholstery, rigid paneling and tubing and many more.

Check with us; we'll help you select the Geon material best suited to your product's requirements. For technical information, please write Dept. GU-3, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

CHEMICAL PROGRESS WEEK-MAY 17-22

GEON RESINS • GOOD-RITE PLASTICIZERS . . . the ideal team to make products easier, better and more saleable.

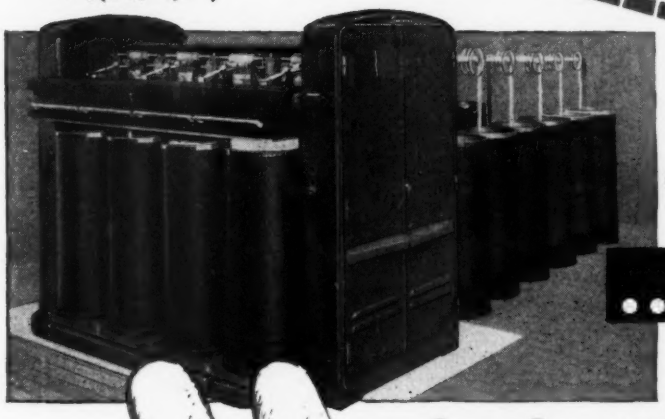
GEON polyvinyl materials • HYCAR American rubber • GOOD-RITE chemicals and plasticizers • HARMON colors

Superflex Spinning Frame

Quik-Set Roving Frame

NOT 1

NOT 2



ROTO-DRAFTER

...BUT 3 BRAND NEW MACHINES

for the WHITIN American System

the only completely integrated unit—now available for processing worsted, synthetics and blends

Now for the first time all three machines necessary for the production of worsted, synthetic, or blended yarns on the American System are available from Whitin. The new and remarkably versatile WHITIN ROTO-DRAFTER processes top. The new WHITIN QUIK-SET Roving frame will accommodate worsted sliver weighing up to 120 grains and 100% synthetic sliver weighing up to 100 grains. The new Whitin American SUPERFLEX Spinning frame, like the QUIK-SET Roving frame, has top arm roll suspension and new weighting arrangements. A well matched trio of outstanding textile machines for quality production and profits . . . **the Whitin-American System Way!**

Complete descriptive literature on all of these machines is available.

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

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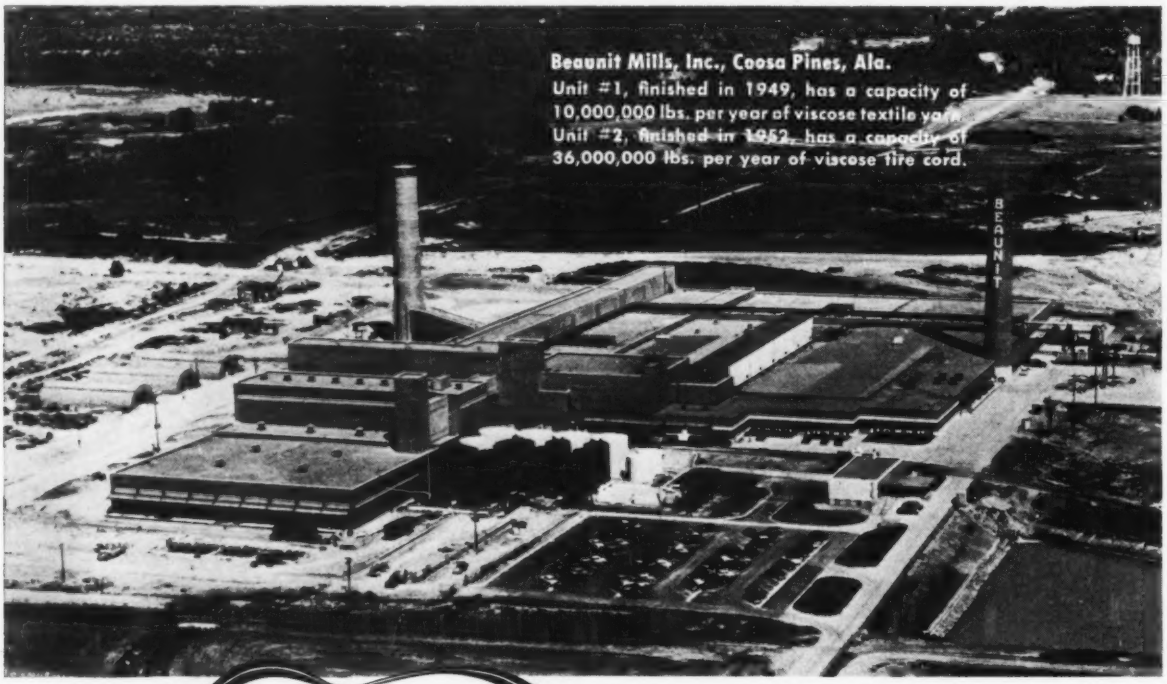

Beaunit Mills, Inc., Coosa Pines, Ala.
Unit #1, finished in 1949, has a capacity of 10,000,000 lbs. per year of viscose textile yarn.
Unit #2, finished in 1952, has a capacity of 36,000,000 lbs. per year of viscose tire cord.

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Projects
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Starting with the American Bemberg Corporation plant (Div. of Beaunit Mills, Inc.) in 1925, Lockwood Greene has designed and supervised the construction of many notable synthetic fiber plants at home and abroad, including:
North American Rayon Corp. (Div. of Beaunit Mills, Inc.)
Celanese Corp. of America, Rome, Ga.
American Enka Corporation, Enka, N. C.
Beaunit Mills #1 & #2, Coosa Pines, Ala.
Chemstrand Corporation, Decatur, Ala.
National Rayon Corp., Ltd., Bombay, India
National Aniline Division—Allied Chemical and Dye Corporaton, Hopewell and Chesterfield County, Va.

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Chemstrand Corporation, Decatur, Ala.
This new plant, designed by Lockwood Greene, has a capacity of 30,000,000 lbs. per year of "Acrilan", a new synthetic fiber of acrylic type.

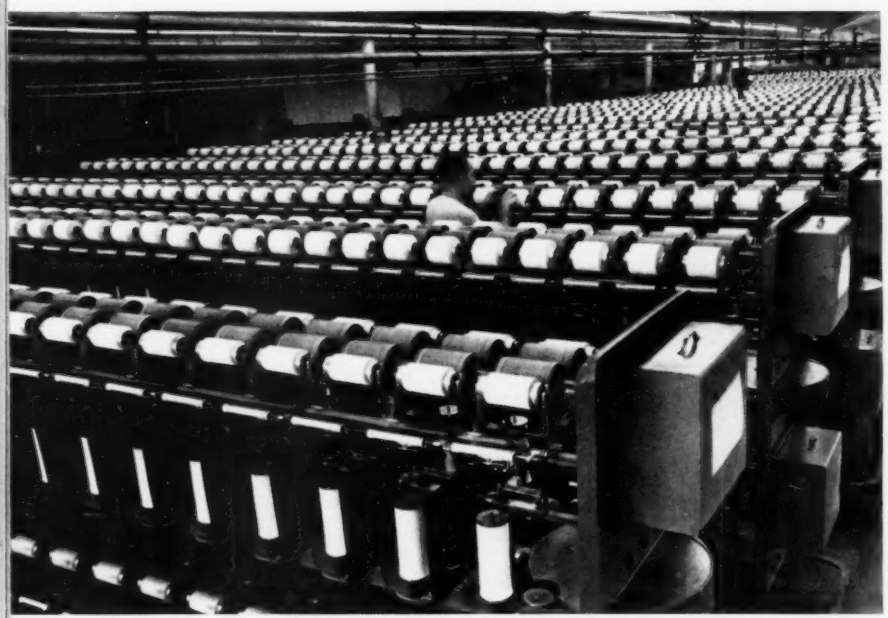
DU PONT

PROPERTY AND APPLICATION DATA ON THESE VERSATILE PLASTIC MATERIALS: DU PONT NYLON, "ALATHON," "TEFLON," "LUCITE."

NEWS

NO. 1 — 1954

Du Pont Nylon Bearings in Yarn Twisters Need No Lubrication, Have Long Service Life



These yarn twisters utilize efficient bearings of Du Pont nylon. Nylon bearings run with little or no lubrication, preventing oil spatter on yarn.

Use of nylon results in fewer shut-downs, less yarn contamination

By refitting yarn-twisting machines with bearings made of Du Pont nylon, textile manufacturers have cut maintenance and replacement costs, and have effected important production economies.

The use of abrasion-resistant Du Pont nylon for bearings prevents oil splatter on yarn being processed, because these bearings can run without lubrication.

The service life of these nylon bearings is exceptionally long — they show virtually no wear after two years' steady use. Tough and resilient, Du Pont nylon bearings perform well on the yarn-twisters and other textile machines.

Parts made from Du Pont nylon molding powder are injection-molded, rapidly and economically in large quantities.

You can use Du Pont nylon to advantage in your textile machines —in gears, shuttles, guides, and bearings for example — because nylon needs no lubrication to keep parts working smoothly. This unique engineering material is already proved by performance in the textile industry.

Properties of Du Pont "Teflon" and "Alathon" are useful in design applications

When searching for ways to improve the design and performance of textile machinery equipment, be sure to evaluate the properties of Du Pont "Teflon" tetrafluoroethylene resin. "Teflon" is a heavy-duty material with outstanding mechanical properties, including those of self-lubrication and a coefficient of friction equal to that of ice on ice. "Teflon" is particularly well-known for its superior electrical properties and chemical inertness.

Another material that offers a high design potential is "Alathon" polyethylene resin. Du Pont "Alathon" is flexible and tough, resistant to moisture. "Alathon" is lightweight and possesses excellent dielectric properties.

The variety of properties offered by Du Pont "Teflon" tetrafluoroethylene resin and "Alathon" polyethylene resin may help blueprint your design plans for the future. For information on these unique engineering plastics, and their applications, clip the coupon.

Textile machine parts of Du Pont nylon offer many advantages

Parts molded of Du Pont nylon are rapidly becoming standard equipment on many types of textile machines. Nylon is tough, smooth, and resists wear and impact. Nylon parts

(*Continued on reverse side, column 3*)

OVER

DU PONT

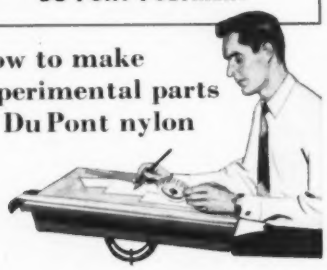
PROPERTY AND APPLICATION DATA ON THESE VERSATILE PLASTIC MATERIALS: DU PONT NYLON, "ALATHON," "TEFLON," "LUCITE."

NEWS

NO. 1 — 1954

POINTERS ON PROCESSING OF DU PONT POLYMERS

How to make experimental parts of Du Pont nylon



Experimental parts of Du Pont nylon can usually be fabricated from standard shapes such as rod, strip or cylinders. To cut such stock, use high-speed steel tools, ground for minimum drag. Coolants such as water and soluble oils allow higher cutting speeds. When working to close tolerances, all measurements should be made at room temperature.

Nylon can be sawed with regular band saws, jig saws and table saws without modifications. Hollow-ground metal cutting blades placed in a conventional table saw yield a smooth cut at high speeds. Again coolants are useful.

Small parts machined from nylon rod. These parts are readily machinable to close tolerances.

Nylon is drilled satisfactorily with ordinary twist drills. To obtain a smooth hole of uniform diameter, use a slow, uniform feed with the highest speed that will not cause "gumming" or burning. Keep holes chip-free by removing the drill from the hole frequently.

Expansion-type reamers are preferred for nylon, but it can also be reamed with the usual types. Cuts taken with a fixed reamer will tend to be undersized because of the resiliency of nylon. Remove at least 0.010 inch with the final ream to get a hole of the correct size.

Threading and tapping of nylon can be done with conventional equipment. A lubricant or coolant is useful for tapping and threading, but isn't always required. A lathe, and the usual single-point tool will cut threads in nylon, and successive cuts should be taken, as in metal. Finish cut should be no less than 0.005 inch.

For turning nylon, use bits with minimum drag. Nylon has exceptional abrasion-resistance and resiliency, so finishing should be done with power-driven rotary steel burrs, abrasive disks, or high speed grinders.

Nylon can be cemented with a number of commercial adhesives.

The machined test parts should be stress relieved to insure dimensional stability. This is best accomplished by heating to 350°F. in "Glycowax" or "Hitec" salt. In experimental work, where equipment is not available for high temperature stress relieving, boiling water will be adequate in many cases. Close tolerances can be maintained with nylon, as with other engineering materials, by following prescribed procedures.

Investigate Du Pont plastic engineering materials in your product development programs

One of the family of these versatile engineering materials is often a key factor in product improvement or new product design.

The wide range of properties available with "Alathon"* polyethylene resin, "Lucite"* acrylic resin, "Teflon"* tetrafluoroethylene resin, and Du Pont nylon are helping solve industrial design problems.

NEED MORE INFORMATION?

Clip the coupon for additional data on the properties and applications of Du Pont plastic engineering materials.

E. I. DU PONT DE NEMOURS & CO. (INC.)
Polychemicals Department
Room 185, Du Pont Building, Wilmington 98, Delaware

Please send me more information on the Du Pont plastic engineering materials checked: ☐ *Du Pont nylon;* ☐ *"Alathon";* ☐ *"Teflon";* ☐ *"Lucite". I am interested in evaluating these materials for*

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TYPE OF BUSINESS _____

*"Alathon", "Lucite", "Teflon" are registered trade-marks of E. I. du Pont de Nemours & Co. (Inc.)

Textile Machine Parts

(Continued)

operate continuously with little or no lubrication. And its lightness, and toughness in thin sections, have proved useful to the textile machinery designers in many ways.

Drafting equipment parts molded of Du Pont nylon include saddle bearings on Saco - Lowell spinning frames. The nylon bearings run without lubrication, reducing cloth spoilage, as well as cutting maintenance costs.

Ring travelers molded of Du Pont nylon do away with snags and provide more yardage on bobbins because of smoother operations.

Verge plate inserts molded of Du Pont nylon outlast previous inserts made of other materials. They provide a better cushion for sinkerbacks, and yield substantial savings in time and maintenance costs for hosiery manufacturers.

The examples above are just a few of the many nylon parts used in the textile industry. Finger bearings, spindle bearings, long draft unit gears, and other parts molded of Du Pont nylon have already proved their efficiency and economy.

NO PLACE TO GO BARGAIN HUNTING!

You miss the BIG savings of Correct Lubrication when you set your sights on price alone!

SOCONY-VACUUM

Correct Lubrication

First Step in Cutting Costs

If you're aiming at lower costs in your plant, you won't automatically bag a bargain by buying low-priced oil and grease. Fact is, the few pennies you save on initial cost may prove mighty expensive.

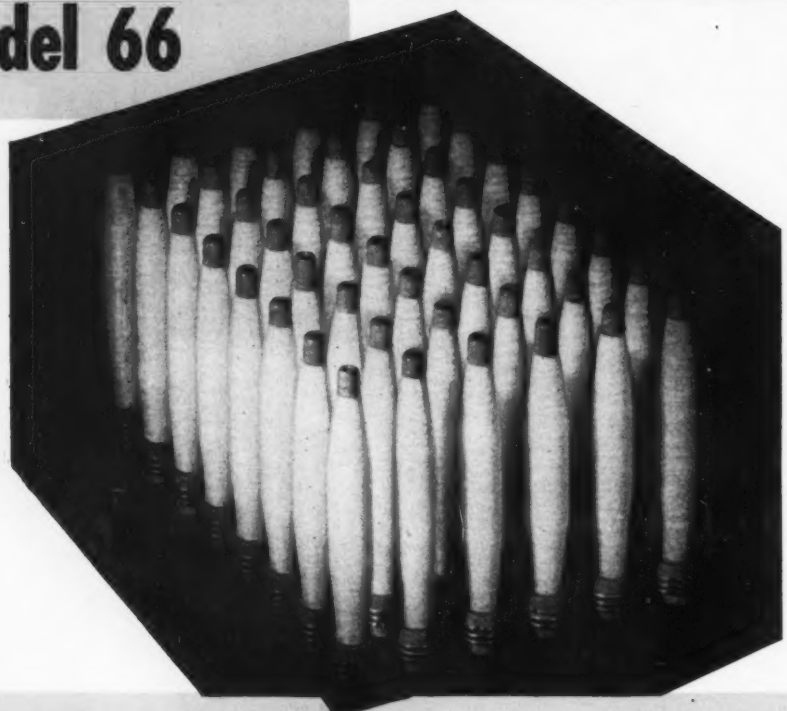
The productive efficiency of your machines—how long they last—cost of maintenance...all this literally may rest on just a thin film of oil. You can't take chances with this vital film—you need *Socony-Vacuum* quality!

But this top quality is only part of the Socony-Vacuum story. We also work with your plant personnel to analyze your machines, recommend the right products, set up lubrication schedules, give you progress reports on benefits achieved.

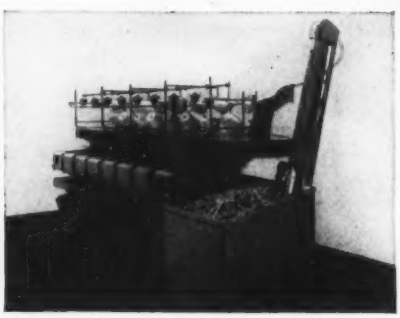
In thousands of plants such a program of Correct Lubrication has improved production—significantly cut unit costs. Can you afford to accept anything less?

SOCONY-VACUUM OIL COMPANY, INC., and Affiliates: MAGNOLIA PETROLEUM COMPANY, GENERAL PETROLEUM CORPORATION

Foster-Muschamp Model 66 AUTOMATIC FILLING WINDER



It makes bobbins like these 300% faster



Model 66 with Centralized Automatic Bobbin Replenisher and Automatic Pinboarding Attachment. Write for data on this highly flexible new machine, suitable for many different types of mills.

Note the uniformity and practically perfect build of these bobbins — wound at a spindle speed of 15,000 rpm *while preserving the original quality of the yarn.* One operator can handle 5000 net pounds of yarn per 8 hour shift at a cost of about 19 mills per pound of yarn quilled.

Because operation is so fully automatic, production is the highest and winding cost is the lowest yet achieved. Operator's only duty is to keep the magazine creel loaded and thread up. Everything else is automatic — including conveying empty bobbins to spindles, starting and stopping spindles, doffing of full bobbins and conveying them to pinboards, or bobbin boxes.

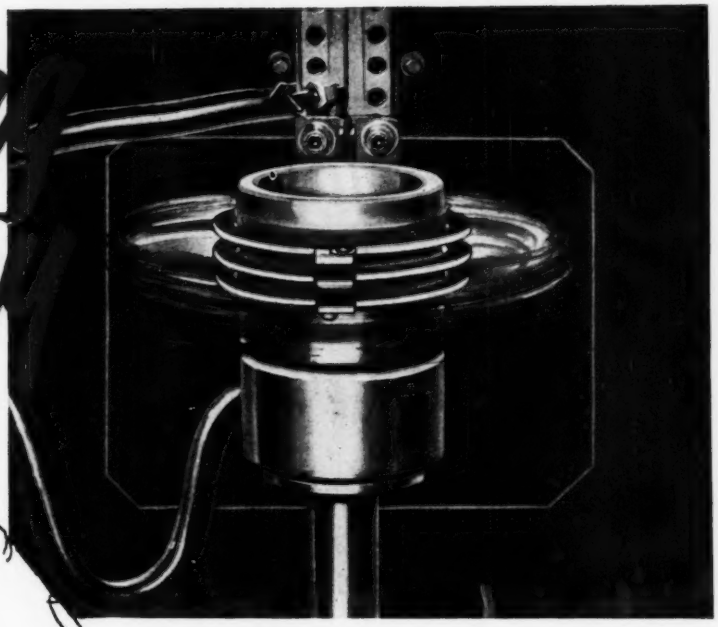
Standard machine is 32 spindles. Different counts or colors can be run on different spindles of the same machine at the same time, and it will wind equally well all types of yarn and fibers — from coarse counts to finest, filament or spun.

FOSTER MACHINE COMPANY

Westfield, Massachusetts, U. S. A.

***Southern office* — Johnston Bldg., Charlotte, N. C.**

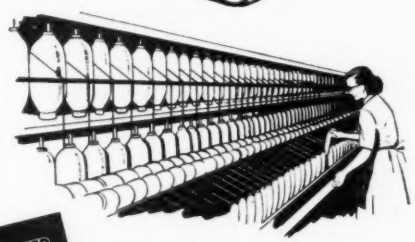
Blazing the wa



to greater bearing performance!

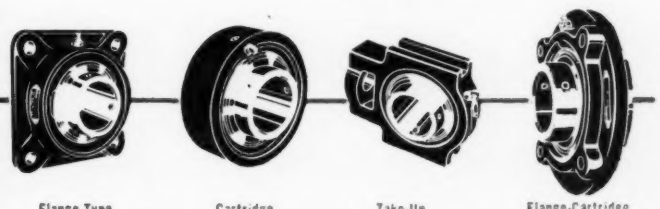
Here's another SEALMASTER patented exclusive in action! *Zone Hardening* is another in a long history of advances that includes: the *first* self-aligning, permanently-sealed industrial ball-bearing unit . . . the *first* outer-race locking pin . . . the *first* ball retainer riding the inner surface of the outer-race ring . . . all patented features! *Zone Hardening* is a completely automatic heat treating process by which the inner-race ring of SEALMASTER Ball Bearing Units are hardened through the ball path and adjacent section only. The extended portion of the inner-race is left in its original metallurgically soft, tough state. Hardened set-screws are mounted through this soft portion of the race, permitting race-to-shaft locking with increased holding power and greater resistance to vibration and shock. Firm lock of bearing to shaft minimizes danger of fretting corrosion and eliminates shaft wear.

This new feature is available on all SEALMASTER Bearing Units which includes a complete line of standard housings, as well as, numerous special designs.



For your copy of Catalog 454 call your SEALMASTER Distributor or write the factory:

SEALMASTER
BALL BEARING UNITS



Flange-Type Unit | Cartridge Unit | Take-Up Unit | Flange-Cartridge Unit

SEALMASTER BEARINGS A DIVISION OF STEPHENS-ADAMSON MFG. CO.
10 RIDGEWAY AVENUE, AURORA, ILL.

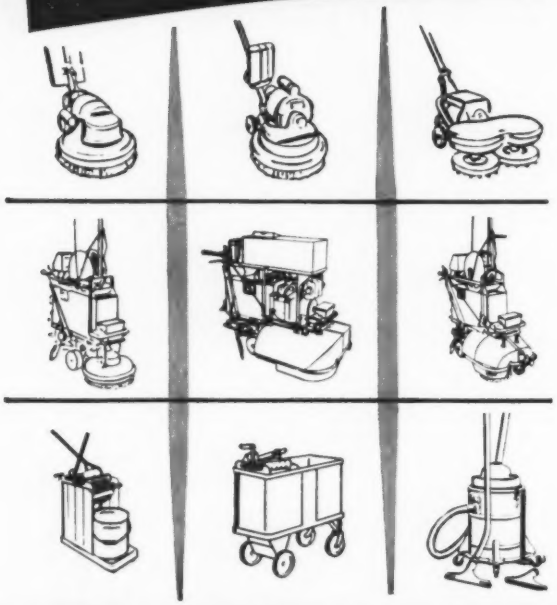
 For more information, write direct or use Reader Service post card.

Keep your floor-maintenance men happy . . .

with *Job-Fitted* EQUIPMENT!

Choose from the COMPLETE *Finnell* Line

More than a score of models and sizes permits selection of the equipment that's exactly right for your job!



However much a maintenance man may want to do a good job, and at the same time show savings in labor costs, he's *stymied* if the machine is too small, or too large, or is otherwise unsuited to the job. Different floors and areas call for different care and equipment. That's why *Finnell makes more than a score of floor-maintenance machines.* From this complete line, it is possible to choose equipment that is correct in size as well as model . . . that provides the maximum brush coverage consistent with the area and arrangement of the floors.

Finnell makes *Conventional Polishing-Scrubbing Machines* in both concentrated and divided-weight types, each in a full range of sizes . . . a *Dry-Scrubber*, with self-sharpening brushes, for cleaning grease-caked floors . . . *Combination Scrubber-Vac Machines* for small, vast, and intermediate operations, including gasoline as well as electric models . . . *Mop Trucks* . . . *Vacuum Cleaners* for wet and dry pick-up, including a model with By-Pass Motor. In addition, *Finnell* makes a full line of fast-acting *Cleansers* for machine-scrubbing . . . *Sealers* and *Waxes* of every requisite type . . . *Steel-Wool Pads*, and other accessories — *everything for floor care!*

In keeping with the *Finnell* policy of rendering an individualized service, *Finnell maintains a nation-wide staff of floor specialists and engineers. There's a Finnell man near you* to help solve your particular floor-maintenance problems . . . to train your operators in the proper use of *Finnell Job-Fitted Equipment and Supplies* . . . and to make periodic check-ups. For consultation, demonstration, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 1905 East St., Elkhart, Ind. Branch Offices in all principal cities of the United States and Canada.

FINNELL SYSTEM, INC.

Originators of Power Scrubbing and Polishing Machines

Everything FINNELL for Floor Care

BRANCHES IN ALL PRINCIPAL CITIES

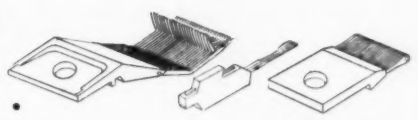
For more information, write direct or use Reader Service post card.

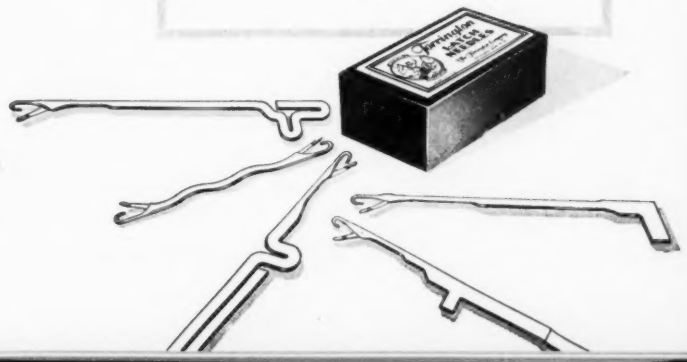
Background for quality knitting...

Many of the established, quality lines of knitted merchandise owe their perfection of stitch to the flawless performance of Torrington Needles.

Another distinct advantage in relying on Torrington is that *all* your needle requirements can be met — from Torrington's ample stocks, carried at convenient points throughout the country to insure prompt service.

Torrington Leaded Units for Raschel and Tricot Machines assure top-quality performance. Call our nearest office for full details.





THE TORRINGTON COMPANY
Torrington, Conn., U. S. A. • Established 1866

Branches: New York • Philadelphia • Chicago • Boston
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TUFFER HAND CARDS

mean greater stripping efficiency

TUFFER Hand Cards mean faster, easier stripping... less effort and less arm strain. Their firm, yet flexible teeth strip smoothly and evenly . . . clean your rolls quickly.

Whether you use Midgley's Improved or Howard's Special, you're using the best when you use TUFFER Hand Cards.

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Howard's Special Hand Stripping Card—Ruggedly constructed...pressed-steel handle... made of three-ply indestructible wood for strength and light weight.

Midgley's Improved Hand Stripping Card—Indestructible backs and handles... Steel clamps protect edges of the card and hold them securely to the back.

B-5

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Tuffer **HOWARD BROS.**

WORCESTER 8, MASSACHUSETTS

Southern Plants: Atlanta, Ga., and Gastonia, N. C.

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TUFFER PRODUCTS Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Re-covered and extra sets loaned at all plants. Lickerins and Garnet Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plants • Midgley Patented, and Howard's Special Hand Stripping Cards • Top Flat Chains

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ALL THE FEATURES *plus*....

MATCHED ENCLOSURES!

SQUARE D's **NEW** POWER-STYLE

SWITCH BOARDS

DESIGN LEADERSHIP FEATURES

Distinctive Styling provides an attractive, modern appearance matching the control center design.

Easier Installation because removable front and back plates expose generous wiring parts. Isolated horizontal wiring trough has drop-off openings, assuring safer, neater wiring.

Flexibility. Complete sections or branch units can be added or changed to meet specific job requirements.

Easier Inspection and Maintenance. Front, side and back plates are removable, thus providing easy and immediate access to specific areas.

SEPARATELY.... OR AS A TEAM THEY DO THE JOB BETTER!

Write for Bulletin SD-18. Address Square D Company, 6060 Rivard Street, Detroit 11, Michigan.

SQUARE D's **NEW** PLUG-IN

CONTROL CENTERS

DESIGN LEADERSHIP FEATURES

Increased Safety because bus bars are fully enclosed, rigidly supported and have ample cross section...circuits isolated by individually enclosed plug-in units...disconnect handle designed for maximum operator protection.

Flexibility. Individual plug-in units or complete sections can easily be added, removed or exchanged. Push-buttons, pilot lights, and selector switches can readily be added to unit doors.

Installation Economy. All wiring channels are large and accessible from front without removing units...no "wire fishing."

Space economy, too. Up to six combination starters fit in a 20"x20"x 90" section. Plug-in unit heights are designed in space-saving increments of 3 inches.

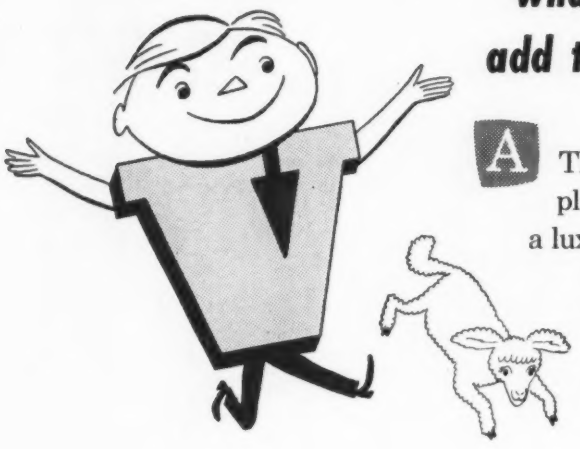
Write for Bulletin 244. Address Square D Company, 4041 N. Richards St., Milwaukee 12, Wisconsin.

SQUARE D COMPANY

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

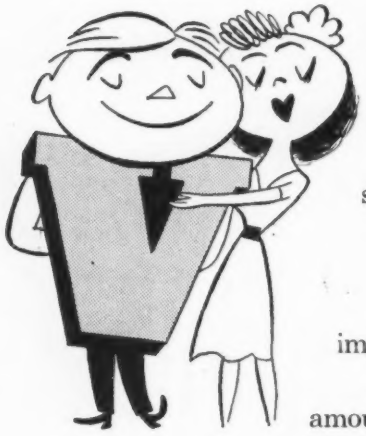
How Vicara® ZEIN FIBER improves a

Q ***Since Vicara and wool are both protein fibers, what special properties does Vicara add to those of wool in a blend?***



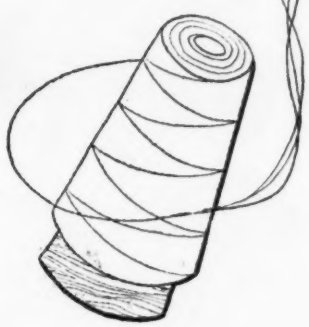
A The touch-tempting softness of V*icara* – plus its easy drapability – give economical fabrics a luxury look and feel, and expensive fabrics the ultimate in quality and richness of texture. V*icara* also dries faster than wool – without sacrificing the important property of moisture absorbency.

Q ***Where are Vicara-wool blends currently being used?***

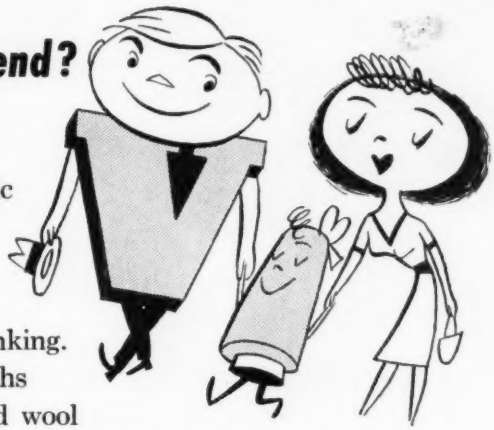


A *New suiting blends* are 50% V*icara*, 50% wool. Hand and shape retention are excellent. V*icara* has always starred in *jersey*, another 50-50 blend which results in a soft-feeling fabric that drapes beautifully and keeps its shape. This jersey has found a wide and successful application in women's wear. Its newest use is in *men's shirts*. As little as 20% V*icara* in *coatings* improves the texture remarkably. A favorite *sweater blend* is a skillful combination of V*icara*, wool and a small amount of nylon. These sweaters wash well and feel softer and softer with increased washings and wearings.

blend...*with wool*



Q *What about care of a Vicara-wool blend?*



A An important care advantage of a V*icara*-wool blend: V*icara* helps the fabric to resist pilling, stringing and fraying. And since V*icara* is almost entirely free from static, there is less attraction of lint and dirt to the fabric. V*icara* itself washes easily without shrinking. It may be pressed with a hot iron. It resists moths and mildew. However, a blend of V*icara* and wool (unless the fabric has been treated to a shrink-or-moth-proofing process) should receive the care of an all-wool fabric.

Remember—
whatever the fabric, whatever the blend— think first of Vicara ... softest fiber known to hand.

In many fabrics the advantages of one fiber seldom equal the combined advantages of two or more fibers blended together. V*icara*, the man-made luxury fiber, improves any blend by adding moisture absorbency, lightweight warmth, washability, beauty, softness, comfort — even when used in small percentages.

Vicara®
ZEIN FIBER

Fiber Division • Virginia-Carolina Chemical Corporation
500 Fifth Avenue, New York 36, N. Y.

THE FIBER THAT IMPROVES THE BLEND

UNIFORMITY • BEAUTY • VERSATILITY • ECONOMY • EASE IN USE • SPINNABILITY
DYEABILITY • WARMTH • HANDLE FEEL AND DRAPE • ELASTICITY • RESILIENCE
ABSORBENCY • HEAT RESISTANCE • WASHABILITY • NON-FELTING • NON-ITCHING
NO ODOR • NO KNOWN ALLERGIES • MOTH RESISTANCE • MILDEW RESISTANCE

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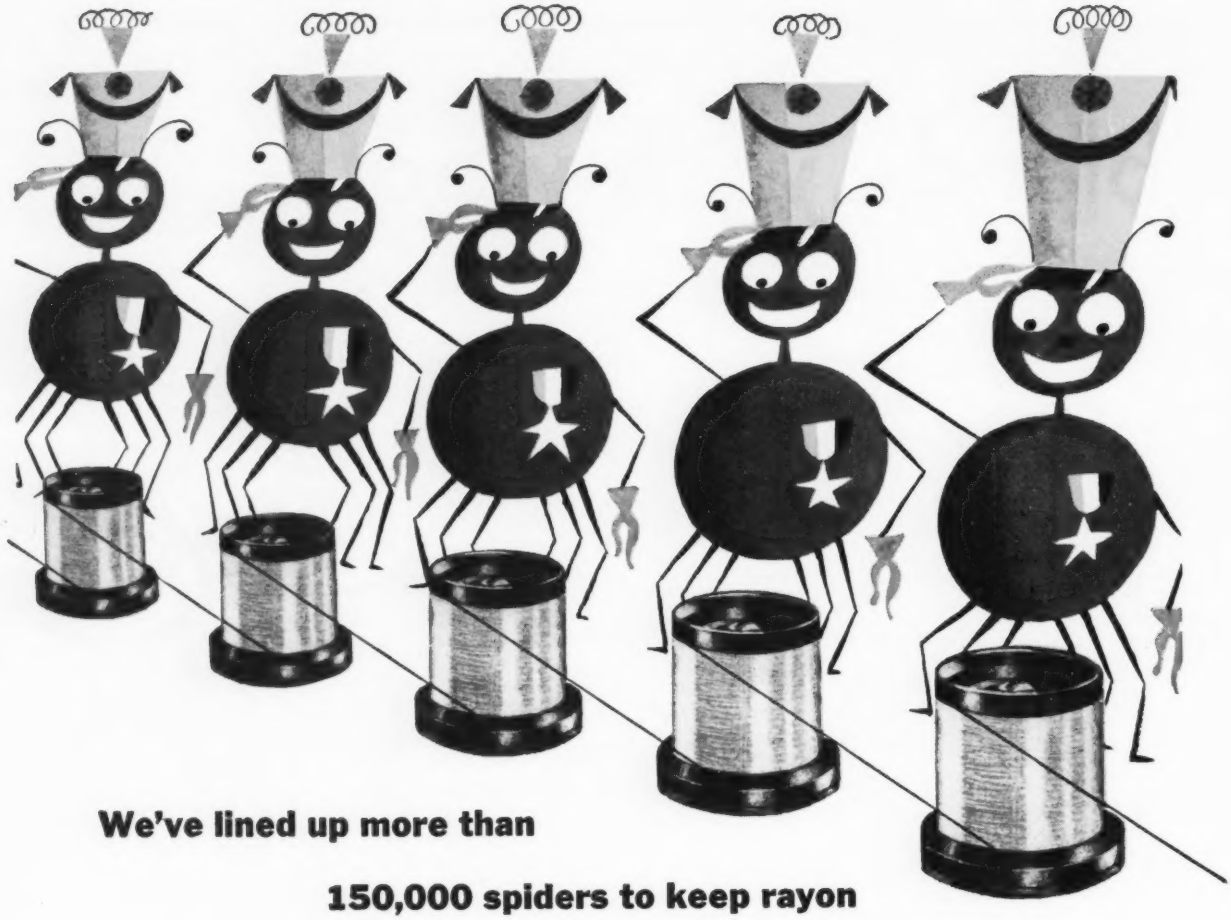


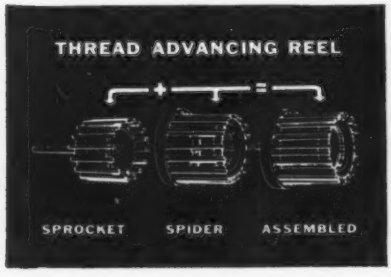
We've lined up more than 150,000 spiders to keep rayon rigidly uniform to the last inch!

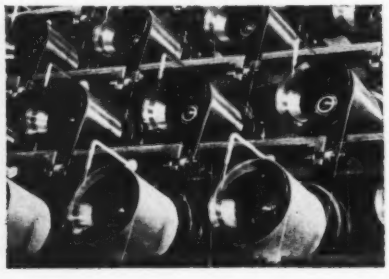
THE MUCH DESIRED UNIFORMITY in rayon yarn that human hands could never achieve is being delivered consistently... *by spiders.*

NO COMMON VARIETY of spiders here. These are the precisely machined elements of the famed thread-advancing reels in IRC's Continuous Process. These spiders carry the yarn from reel to reel as a single strand. Inch by inch, the yarn is spun, bleached, treated, dried and twisted.

NOT THE SLIGHTEST VARIATION occurs all along its miles of length. Denier, strength, quality are uniform to the last inch. Untouched by human hands, the yarn is neither marred by knots, nor scarred by broken filaments.

CONTINUOUS PROCESS is the one process that saves weavers costly seconds due to chronic yarn imperfections. No wonder IRC rayon yarn has become the quality standard among quality weavers.





Industrial Rayon Corporation

Cleveland, Ohio

Sales Office: 500 Fifth Avenue, N. Y. 36

"This solution satisfied the Safety Engineering Department..."

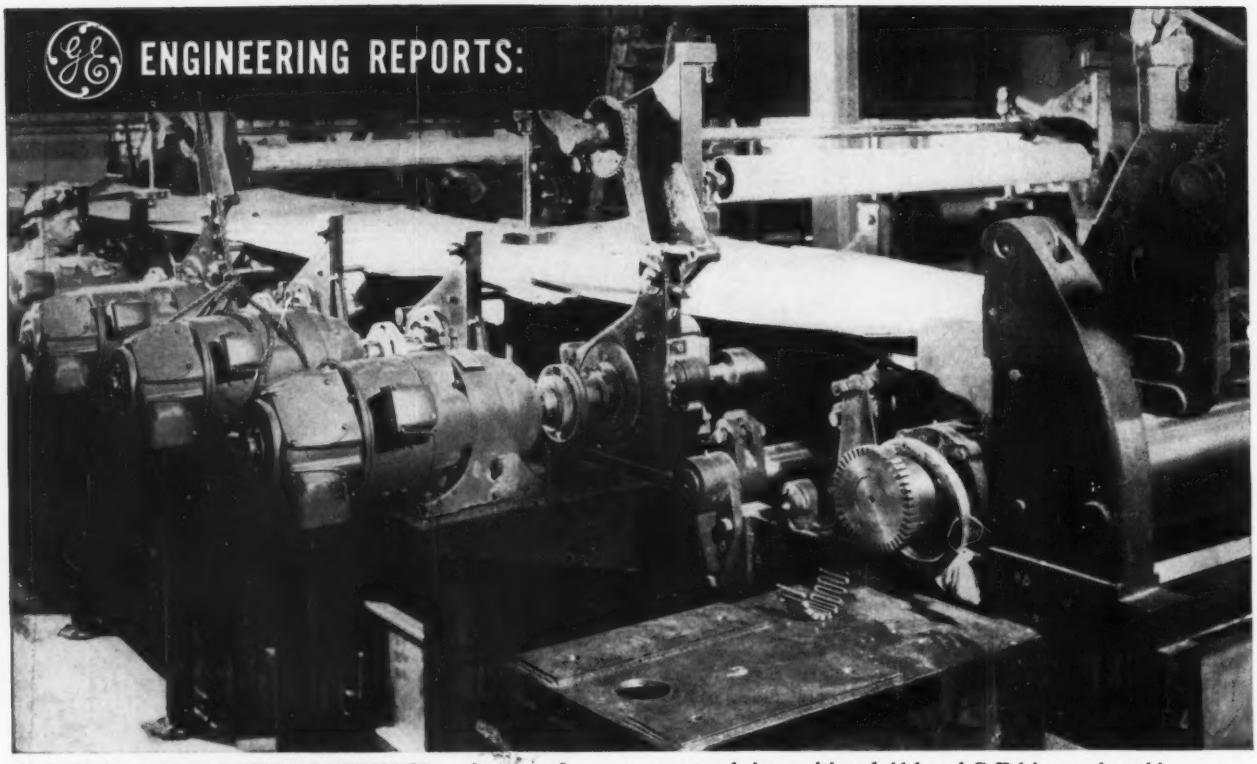
A leading carpet manufacturer in the Philadelphia area was faced with a serious problem – oil slick floors caused by lubricant leakage and throw-off. The Safety Engineering Department issued frequent warnings about dangerous conditions near the looms. Both conventional and special-purpose lubricants were tried but they either did not do a proper lubricating job or failed to stop the leakage.

When Sinclair Lubrication Engineer Harry Donovan was called in, he spent several days observing operating conditions. "Then," he reports, " I recommended Sinclair NO DRIP. I reasoned that Sinclair NO-DRIP was the right oil for this job because it is a high quality lubricant *especially fortified with Sinclair-developed additives to eliminate leakage and throw-off.* A trial period proved this recommendation entirely solved the problem. Soiled, slippery floors were eliminated and oil consumption was cut. What's more, Sinclair NO-DRIP Oils' superior lubricating qualities decidedly lengthened bearing life."

SINCLAIR LUBRICANTS

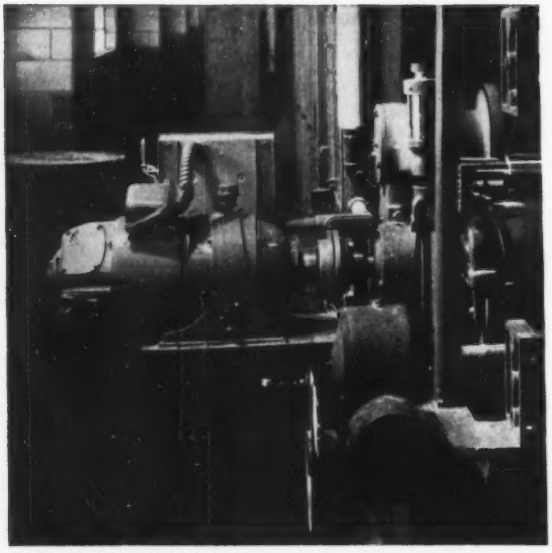
Why not let a Sinclair Lubrication Engineer help solve *your* lubrication problem? *There's no obligation.* Contact your local Sinclair office or write Sinclair Refining Company, 600 Fifth Avenue, New York 20, N. Y.

ENGINEERING REPORTS:



EASY INSTALLATION, SIMPLE MAINTENANCE are features of this multiple-motor dyeing range at Grace Bleachery. This construction view shows several of the new three-piece G-E gear-motors being positioned. Although G-E drives such as this will operate for a long time with only routine maintenance, motors may be removed without disengaging the gears.

G-E Packaged Range Drive steps up



EASY-TO-MAINTAIN, G-E three-piece gear-motor runs this starching operation on a plisse range. This motor is only one of the many types that G.E. manufactures for the textile industry. Others include: totally-enclosed, ball-bearing loom motors; open, lint-proof motors; vertical motors for twisters and many others to meet your special requirements.

SPRINGMAID FABRICS

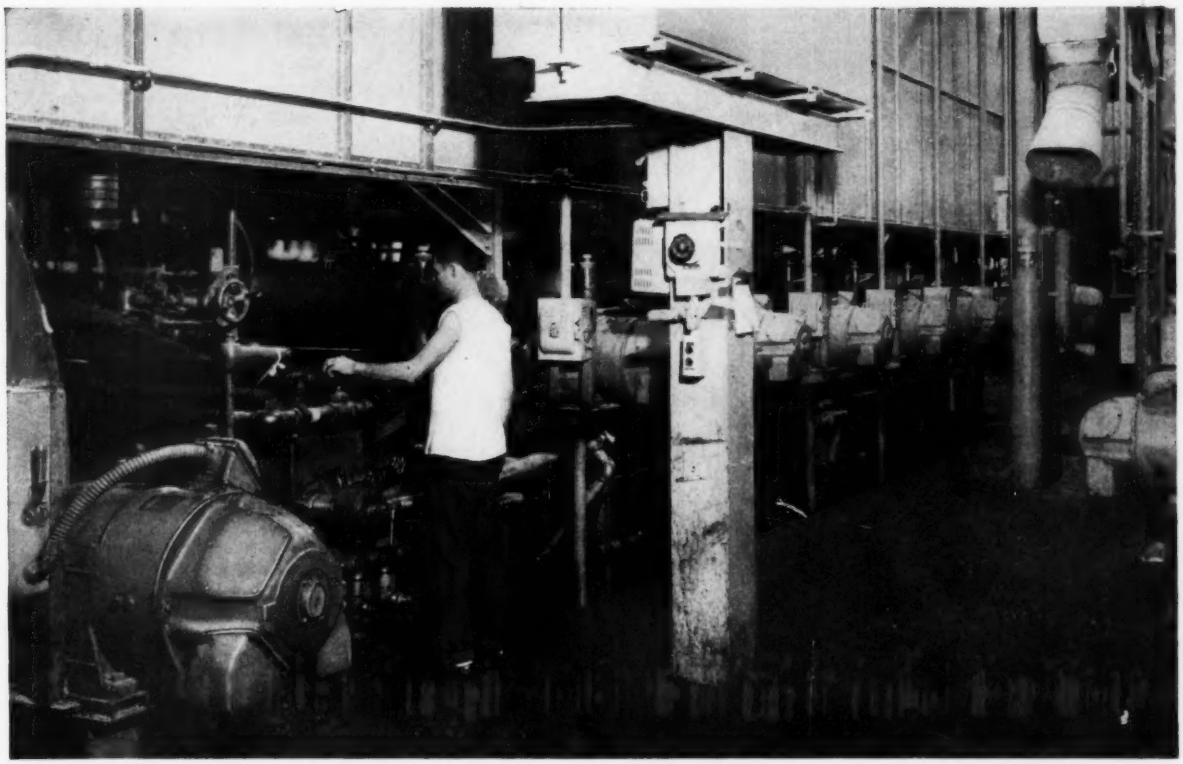
Compact drive gives Springs Cotton Mills' Grace Bleachery high speed finishing

Washing, drying, bleaching, mercerizing, dyeing—whatever your range operation may be—the General Electric packaged range drive can give you higher production per man-hour with lower maintenance costs.

Efficient co-ordination of the drive elements through centralized control is one of the factors making this increased output possible by providing accurate control of cloth tension at all operating speeds. This assures you maximum cloth uniformity with minimum supervision and thus with lower costs.

ONLY THREE STANDARD COMPONENTS make up the G-E adjustable-voltage drive system: the operator's finger-tip control station which can be installed in any convenient location; three-piece range-driving motors and their associated rheostats; and the packaged speed variator unit, containing motor-generator set and exciter, which can be located anywhere to conserve valuable range space.

YOU CAN CUT RANGE COSTS with the easy-to-maintain G-E three-piece gear-motors. They need no special mounting and may be easily removed for servicing without disconnecting the gears or removing the motor base from the foundation. Along with easy maintenance, sturdiness and smooth operation combine to assure you long life for the motor itself.



HIGH FINISHING OUTPUT of Spring Cotton Mills' Grace Bleachery is speeded by three-piece G-E gear-motors. Control system with master rheostat (on center post) provides finger-tip control of entire installation. Packaged power unit was easily located out of the range area. G.E. co-ordinated manufacture and delivery of nearly all drive equipment for this mill.

cloth-finishing output per man-hour

Check the advantages which the G-E packaged range drive can offer you:

SIMPLE TENSION CONTROL, accomplished with inexpensive compensating gates or other co-ordinating equipment

WIDE SPEED RANGES, available up to 8–1 without special equipment

CENTRALIZED CONTROL of range speed from a single location

SMOOTH, STEPLESS ACCELERATION AND DECELERATION with close speed control

EASY MAINTENANCE—motors may be removed for servicing without disengaging drive gears

DYNAMIC BRAKING for sudden stops and regenerative braking for controlled deceleration

YOU CAN PROFIT from other mills' experience. Mail coupon for additional details on G-E range drives or contact your nearest General Electric Apparatus Sales Office.

Mail this coupon for help in solving your range drive problems!

General Electric Co., Section G-654-33
Schenectady 5, N. Y.

Please send me without obligation your Bulletin GEA-5010 which gives the latest developments in G-E range drives.

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COMPANY_____

ADDRESS_____

CITY_____ STATE_____

Engineered Electrical Equipment for Textile Mills

GENERAL ELECTRIC

INCREASE HORSEPOWER CAPACITY 40%

. . . and give you more use per dollar

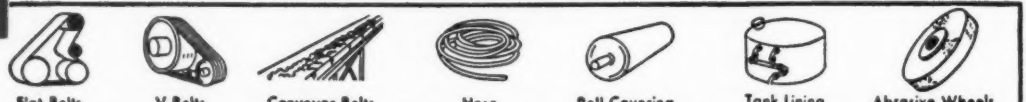
The combination of new synthetic fibers in the strength member of R/M Super-Power V-Belts assures greater resistance to shock loads, virtually no stretch, and practically eliminates matching problems. This, along with our straight side-walls, means better tensioning and grip, less slippage . . . more power delivered on the drive. Compared with regular V-belts you can handle approximately 40% greater load with the *same number* of R/M Super Power V-Belts or do an equal job with *fewer.*

Another plus . . . these V-belts are oil-proof, non-spark and heat-resistant. Send for Bulletin 6628. Ask the R/M distributor to show you how R/M Super-Power V-Belts will deliver "More Use per Dollar" on your drives . . . Condor V-Belts continue to be the standard for regular service.

RM

MANHATTAN RUBBER DIVISION — PASSAIC, NEW JERSEY

RAYBESTOS-MANHATTAN, INC.



Other R/M products include: Industrial Rubber • Fan Belts • Radiator Hose • Brake Linings • Brake Blocks • Clutch Facings
Asbestos Textiles • Packings • Engineered Plastic, and Sintered Metal Products • Bowling Balls

For more information, write direct or use Reader Service post card.

Now . . . from Sonoco —

PLASTIC

SINGLE-HEAD

SPOOLS

ECONOMICAL
DURABLE
SNAG-PROOF

for packaging industrial threads!

Sonoco research and product development scores again . . . and this time with single head plastic spools that feature the tapered base, permitting non-snag free delivery during "take off." Available in three standard base diameter and barrel length sizes— 2 1/2" x 3 1/4"; 2 3/4" x 4 3/16"; and 3" x 4 3/16". Barrels may be ordered smooth, scored, knurled or flocked to prevent slippage of thread in primary winding. Supplied in a variety of solid colors or color lacquer tipped for identification. Lower your thread package costs with this new Sonoco plastic spool!

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PAPER CARRIERS
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MEXICO: Sonoco de México, S. A., Apartado 10239, México, D. F.

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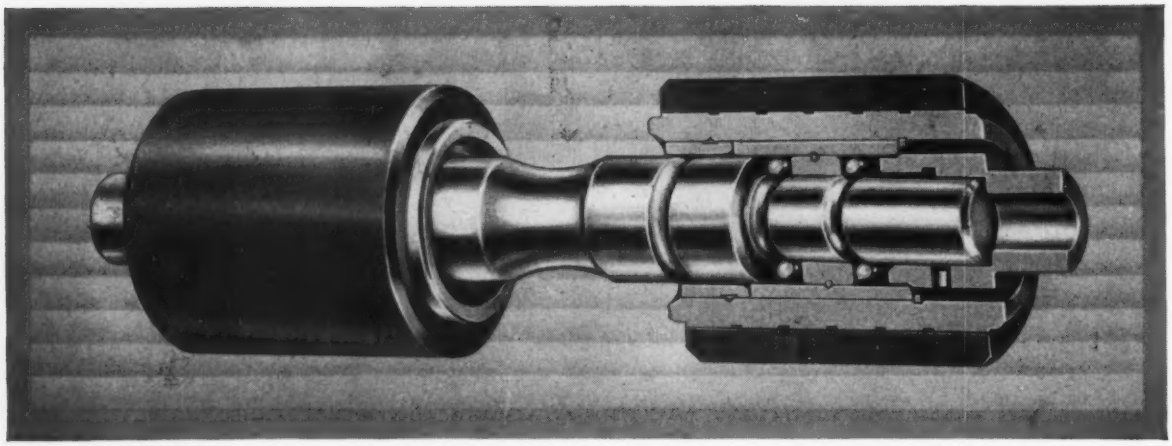
 For more information, write direct or use Reader Service post card.

from SKF a LOW COST ball bearing top roll 5 WAYS BETTER



Over five *million* SKF Ball Bearing Top Rolls in service are proving that they're 5 ways better—and any SKF District Office will show you that they're priced *right!*

Here are the 5 important advantages of SKF Ball Bearing Top Rolls

1 SKF's thick-walled, interchangeable, machined shells are easily removable for periodic cleaning. Can do accurate cot grinding. Experience no distortion.

2 SKF Rolls need re-greasing only at 20,000-hour intervals . . . equivalent to 3 years of three-shift, six-day week operation.

3 Ball Bearings provide concentric, non-wobbling rolling, which means a more uniform yarn.

4 SKF Top Rolls are available with open or closed ends, for all spinning and roving.

5 More SKF Rolls are in service throughout the world than any other make of anti-friction rolls, and have been successful for over 16 years.

In addition, of course, you obtain these well-established cost and quality advantages inherent in ball bearing top rolls—elimination of spoilage from oil leakage, minimized picking and cleaning, elimination of wear on the saddle, cap-bars, nebs and roll necks, reduced power consumption, and, altogether, ***cleaner, stronger, more uniform yarns.***

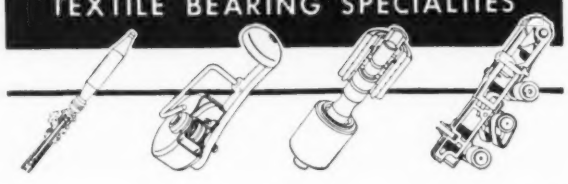
Ask any SKF District Office to have a qualified Sales Engineer show you how to get the 5 important advantages of SKF Ball Bearing Top Rolls. Or, if you prefer, send for SKF Bulletin No. 1052.

SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.—*manufacturers of* **SKF** *and* HESS-BRIGHT® *bearings.*

7540

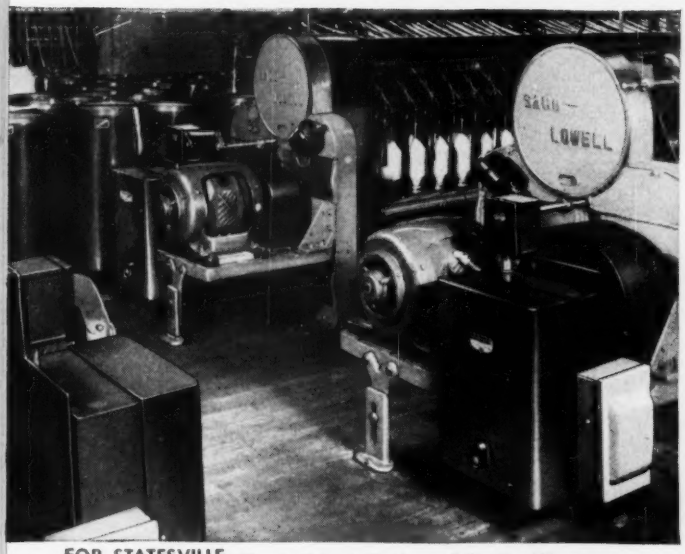
SKF®

TEXTILE BEARING SPECIALTIES



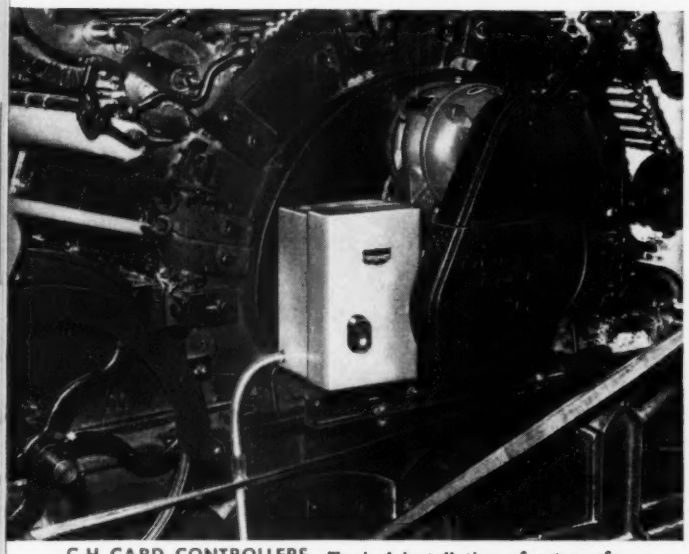
CUTLER-HAMMER

MOTOR CONTROL FOR THE TEXTILE INDUSTRY

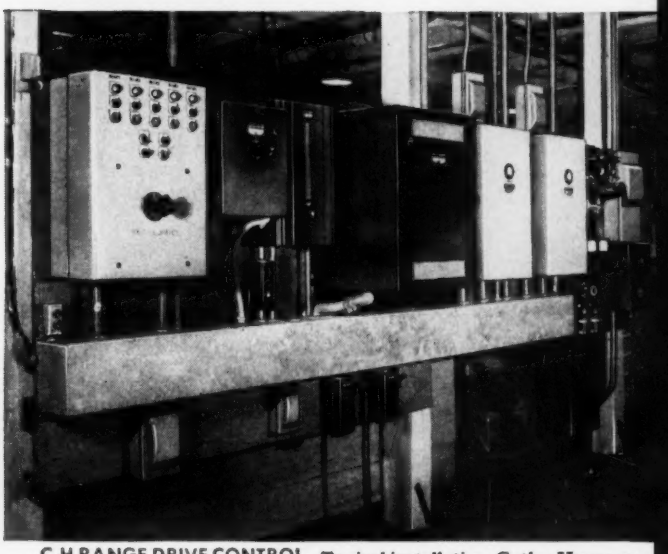


FOR STATESVILLE—Typical installation of Cutler-Hammer Smooth Starters and Shipper Rod Switches. STATESVILLE DIVISION, The Seminole Mills, Statesville, N. C.

C-H LOOM SWITCHES—Typical installation of Cutler-Hammer Loom Switches on unique C-H Welded Pedestals. Leward Cotton Mills, Inc., Worthville, N. C.



C-H CARD CONTROLLERS—Typical installation of extra-safe Cutler-Hammer Card Controllers. Charles H. Bacon Company, Lenoir City, Tenn.



C-H RANGE DRIVE CONTROL—Typical installation. Cutler-Hammer Electronic Dancer Roll Regulator and Range Drive Controller for slack drying range at Mooresville Mills, Mooresville, N. C.

More and more their choice

Men who select and purchase textile mill production equipment can have but one goal in mind. They *must* buy wisely because the production of the mill is a measure of the wisdom of their choice. When it comes to motor control, they buy with extra care. For motor control is pivotal equipment, guiding and guarding motor and machine performance. More and more the choice of these men falls upon Cutler-Hammer Motor Control. For they know from experience that Cutler-Hammer dependability is no mere competitive claim. They know it is the earned advantage of the longest and most intensive specialization in motor control engineering . . . a fact that stands out clearly in a mill's production records to reflect favorably on their own ability and good judgment. They know that Cutler-Hammer can furnish any type of control needed . . . from the simplest starters to the most complex electronic equipment.

You too will find it pays to insist on Cutler-Hammer Motor Control and refuse all substitutes. An adequate network of Authorized Cutler-Hammer Distributors throughout the textile manufacturing areas insures prompt attention and supply. CUTLER-HAMMER, Inc., 1457 St. Paul Avenue, Milwaukee 1, Wisconsin.

CUTLER-HAMMER
MOTOR CONTROL
C-H

OUT OF THE "BUFFALO" PUNISHMENT PIT—

COME BETTER FANS FOR YOU

"Buffalo" Type "BL" Limit-Load Ventilating Fan

"Buffalo" Axial Flow Fan

• To be sure that "Buffalo" rotors can stand far greater stress than they would ever encounter in an installation, we deliberately try to destroy them in this "Buffalo" vacuum test pit! Here, in a partial vacuum, the rotor to be tested can be revolved at tip speeds as high as 60,000 and even 70,000 feet per minute. The slightest unbalance, the slightest structural weakness, would result in destruction of the rotor at these fantastic speeds — and it shows up here in the Punishment Pit, not in the installed fan.

This is just one phase of the rigid testing and excellence of engineering, or "Q" Factor*, which assure you of a best buy when you specify "Buffalo" Fans. Why not write for "Buffalo" engineering literature on *your* air handling problem?

**The "Q" Factor — The built-in Quality which provides trouble-free satisfaction and long life.*

BUFFALO FORGE COMPANY
184 MORTIMER STREET BUFFALO, NEW YORK
Publishers of "Fan Engineering" Handbook
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.
Sales Representatives in all Principal Cities

VENTILATING PRESSURE BLOWING AIR CLEANING COOLING AIR TEMPERING HEATING INDUCED DRAFT FORCED DRAFT EXHAUSTING

for high speed wetting and rewetting

nekal *ws-21*

The new **Nekal WS-21** is designed to give maximum efficiency for both wetting and rewetting at all temperatures. What's more, this liquid form chemical has a pleasant odor and controlled foaming qualities.

Nekal WS-21, the Wetting Agent, will produce excellent results in such operations as:

- ★ High speed continuous dyeing.
- ★ Package and beam machine processing.
- ★ Resin finishing, sizing, desizing and bleaching.
- ★ Wetting in jigs, padders, reel machines and open tubs.

Nekal WS-21, the Rewetting Agent, makes textiles highly absorbent. It is used:

- ★ To give rewetting in sanforizing.
- ★ For rewetting prior to dyeing and printing.
- ★ For finishing purposes on cellulosic and animal fibers.

If a highly concentrated product is preferred, use **Nekal WS-25,** a liquid brand three times the strength of **Nekal WS-21.**

Write today for a circular on **Nekal WS-21** and **Nekal WS-25.**

ANTARA® CHEMICALS
A SALES DIVISION OF GENERAL ANILINE & FILM CORPORATION
435 HUDSON STREET • NEW YORK 14, N. Y.
SALES OFFICES: NEW YORK • BOSTON • PROVIDENCE • PHILADELPHIA • CHARLOTTE N. C. • CHATTANOOGA • CHICAGO PORTLAND ORE. • SAN FRANCISCO • IN CANADA: CHEMICAL DEVELOPMENTS OF CANADA, LIMITED, MONTREAL

ANTARA gaf

"From Research to Reality"

You'll be in good company when you, too, use

TORRINGTON NEEDLE BEARINGS

When you build the high capacity and long service life of Torrington Needle Bearings into your products, you will join the manufacturers whose trade-marks are reproduced here—and thousands more—who use Needle Bearings.

Our Engineering Department will be glad to help you determine how Needle Bearings can be used to advantage in your products.

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TITAN CHAIN SAWS
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IBM
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NORTH AMERICAN AVIATION

LUBRICATING—or Just Oiling?

The above cartoon is not meant to infer that your oilers are doing a hit or miss job, but to remind you that your lubrication progress may not be keeping pace with your technological progress.

The first step in lubrication progress is planned lubrication. This means proper application of the right kind and amount of a lubricant at the right time.

Gulf Sales Engineers, working hand-in-hand with your personnel, will suggest a method of planned lubrication for every room in your mill.

Planned lubrication can give added life and improved performance to your machines. It can cut power consumption and part replacements, as well as halt rust and corrosion.

Use the chart below as a guide in determining whether your mill utilizes sound lubrication practices. If not, call in a Gulf Sales Engineer. He is trained in petroleum technology and has a thorough knowledge of textile machinery operation. He will help you reap the benefits of planned lubrication.

GULF INDUSTRIAL LUBRICATION

Gulf Oil Corporation
Gulf Refining Company
GULF BUILDING, PITTSBURGH, PA.

LUBRICATION CHECK CHART

Do you utilize these sound lubrication practices?

YES	NO	
☐	☐	Trained lubrication personnel
☐	☐	Right lubricant for the job
☐	☐	Proper application of the lubricant
☐	☐	Definite lubrication schedule
☐	☐	Proper storage and handling

For more information, write direct or use Reader Service post card.

Engineered for the Textile Industry

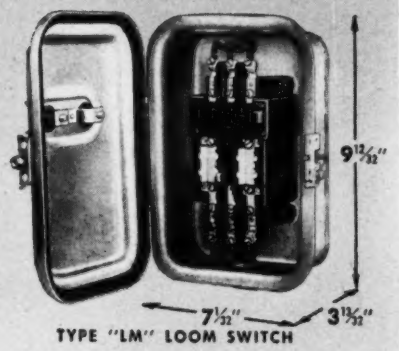
3 NEW DEVELOPMENTS IN MOTOR CONTROL

ARROW AH HART

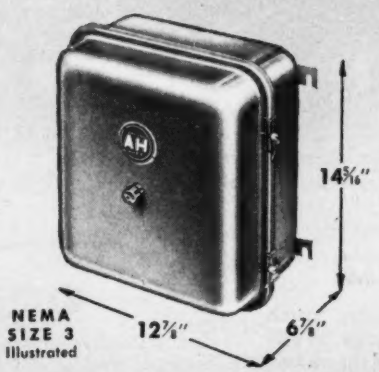
All

OFFERING THESE IMPORTANT ADVANTAGES

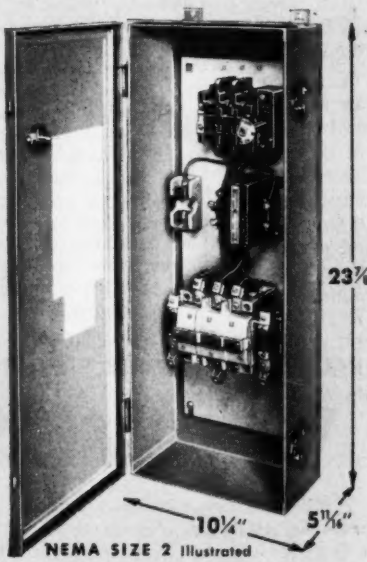
- **DOUBLE PROTECTION AGAINST LINT . . . and other breakdown materials**
- **GREATLY REDUCED FIRE HAZARD**
- **SUPERIOR PERFORMANCE and DEPENDABILITY**
- **LONGER LIFE**
- **SMALLER SIZE and WEIGHT . . . saving valuable space**
- **FASTER, EASIER INSTALLATION and MAINTENANCE**
- **SAFER, MORE CONVENIENT OPERATION**



TYPE "LM" LOOM SWITCH



NEMA SIZE 3 Illustrated



NEMA SIZE 2 Illustrated

TYPE "LM" Loom Switch

Size 0, 3 pole, 2 hp to 600 volts a-c. Completely new, radically different . . . not just an adaptation of a standard switch. Unique, built-for-the-purpose rotary overload mechanism resists shock far in excess of any found in actual loom installations. Fully enclosed switch unit plus lint proof enclosure provides double protection against lint.

NEMA TYPE XII Enclosure for Magnetic Starters

For starter sizes 0, 1, 2 and 3. Used wherever switch ratings exceed 2 hp . . . or remote control is desired. Enclosures with heavy neoprene gaskets protect effectively against lint. Smaller, lighter A-H Type "RA" (Right Angle) Starters provide superior performance, dependability. Vertical contacts offer added protection by preventing accumulation of breakdown material.

NEMA TYPE XII Combination Starter

Smaller and lighter than any other combination starter of comparable rating, the "RAC" offers the advantages of the unique A-H Type "RA" Starter plus the exclusive new A-H "RAD" Disconnect *plus* the all new A-H enclosure that provides full protection against lint and other breakdown materials. Available in Sizes 0, 1 and 2 with fused or unfused disconnect or with circuit breaker.

The Arrow-Hart Controls shown have been designed and constructed throughout specifically for the operating conditions peculiar to the textile industry. Standards for safety, performance and ease of installation and maintenance were determined, met and exceeded in all these Arrow-Hart Motor Controls. Be sure to request a copy of "Electrical Controls for the Textile Industry" . . . complete with product, application and engineering data.

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Your Folder Will Be Mailed Promptly

INDUSTRIAL CONTROL DIVISION

THE ARROW-HART & HEGEMAN ELECTRIC CO.
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Please send my free copy of "Electrical Controls for the Textile Industry."

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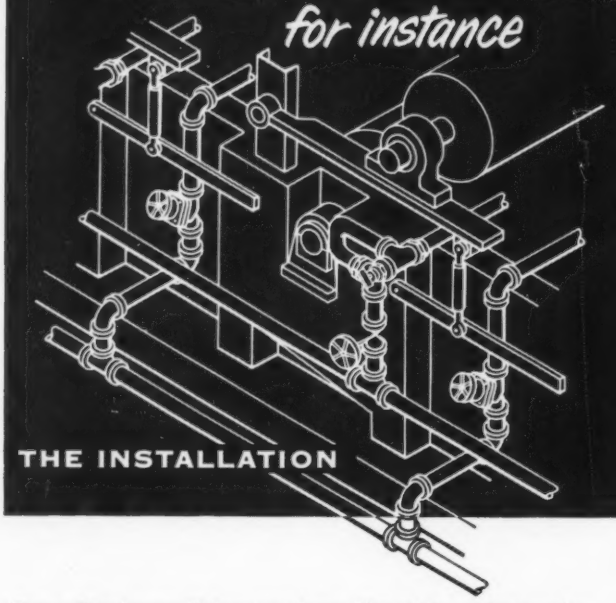
ZONE_____ STATE_____

TW-5

Doing What Other Valves Couldn't ...on Slurry Service, for instance



THE INSTALLATION

Crane Diaphragm Valves on slurry-like white water service to cylinder tanks on paper-making machines at Excello Paper Products Co., Inc., Cincinnati.

VALVE SERVICE RATINGS

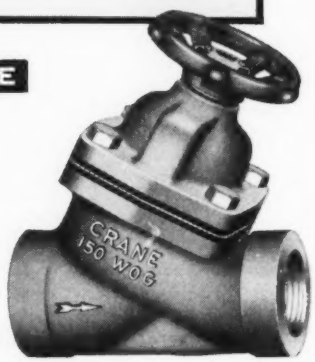
SUITABILITY:	"Made to Order" for tough jobs
FEATURES:	Seats tight where others fail
MAINTENANCE COST:	None – needs no attention
SERVICE LIFE:	Many times longer than expected
OPERATING RESULT:	Plant efficiency improved
AVAILABILITY:	Crane Catalog item – No. 1610

THE CASE HISTORY

Valves formerly used had been giving much trouble that started between tank fillings. While many replacements were tried, none of the valves could handle the white water solids and fibers that built up in the bonnet and seats between operations. Result was the valves were hard to operate, and leaked at the seats.

Keeping up with valve maintenance and the hazardous, messy floors caused by white water leakage was costly and annoying. But it was a problem that Crane Diaphragm Valves solved handily. The leakage stopped—machine room efficiency went up as the safety hazard was gone—plant appearance improved. Installed about a year ago, Crane Diaphragm Valves keep doing these things without a penny's maintenance cost to date.

THE VALVE



Crane Diaphragm Valves are packless. Bonnet and working parts are sealed to line fluid; there's no place for sediment to build up. Independent disc and diaphragm design saves wear on diaphragm, permits valve to be closed even should diaphragm fail. Pliable disc insert seats tight on foreign particles that cause leakage and wire drawing in ordinary valves. Choose these valves from wide variety of body and trim materials for corrosive, abrasive, and ordinary services. See your Crane Catalog or Crane Representative.

THE BETTER QUALITY... BIGGER VALUE LINE... IN BRASS, STEEL, IRON

CRANE VALVES

CRANE CO., *General Offices:* 836 S. Michigan Ave., Chicago 5, Illinois
Branches and Wholesalers Serving All Industrial Areas

VALVES • FITTINGS • PIPE • PLUMBING • HEATING

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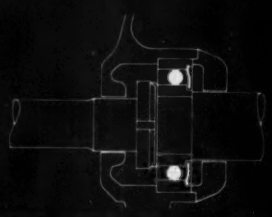
Here's another reason why

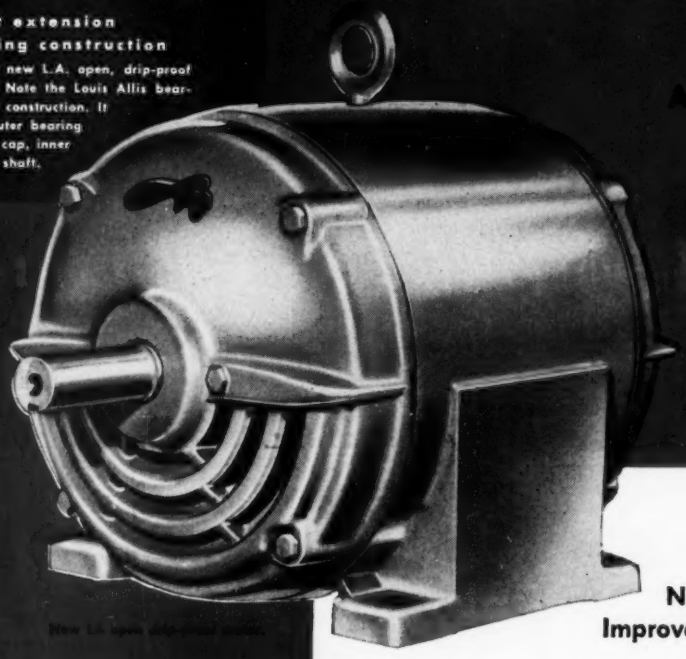
the NEW L.A. *Line*

by the Louis Allis Co.

is your BEST *electric motor* BUY



Shaft extension bearing construction used in new L.A. open, drip-proof motors. Note the Louis Allis bearing-cap construction. It locks outer bearing race to cap, inner race to shaft.



A brand-new power package, completely redesigned inside and out!

with NEW BEARING CONSTRUCTION

plus

New modern styling
More compact design
New conduit box arrangement
Improved ventilation and better protection
More versatile mounting

HERE'S the locked bearing construction that makes the new L.A. motors even better—gives them extra life, extra dependability. It positions the rotor . . . limits shaft end-play . . . gives you ample V-belt drive capacity. You get factory prelubrication, too, with a new, improved grease-retaining system that saves servicing and maintenance — for years of attention-free operation under most conditions.

That's not all! You get standard bearings in every unit — sizes specially selected to be easily obtainable from local stocks. And there's no need to tear the motor down to get bearing numbers — they're stamped right on the new motor nameplate.

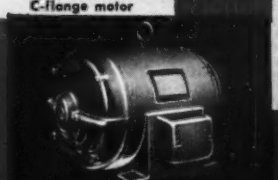
Add this modern, dependable bearing construction to all the other features and you see why the L.A. line is your best motor buy. Get the complete story from your nearby Louis Allis Sales Engineer.

We specialize in
SPECIAL MOTORS *and*
PROMPT DELIVERY, TOO

There's a Louis Allis special motor for your toughest application. Whatever electrical or mechanical modifications you need, check first with Louis Allis.

Vertical NEMA C-flange motor

NEMA D-flange motor



NEMA C-flange motor

THE LOUIS ALLIS CO.
MILWAUKEE 7, WISCONSIN

LA-105

Costs less - Delivers more!

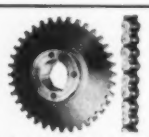
Savings up to 33% . . . efficiency up to 97% . . . are yours with this new and better kind of speed reducer. Proved in tens of thousands of installations, in all types of industry!

This reducer is mounted directly on the driven shaft. No foundation, no flexible couplings, no sliding base required. No lining up difficulties. The torque-arm, fastened to any fixed object, anchors the reducer. Unit is driven through any V-belt drive. Stock Taper-Lock Sheaves prescribed for each job. Tri-Matic Overload Release and Backstop are available if desired.

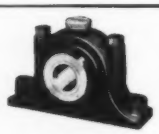
Torque-Arm Speed Reducers are sold from Distributor's stocks—in single reduction and double reduction series—with capacities from 1 to 43 hp and output speeds from 12 to 330 rpm. Standardize on this modern idea in speed reduction—it saves you money.

DODGE MANUFACTURING CORPORATION, 1400 Union St., Mishawaka, Ind.

DODGE
of Mishawaka, Ind.


TAPER-LOCK SPROCKETS AND DODGE ROLLER CHAIN

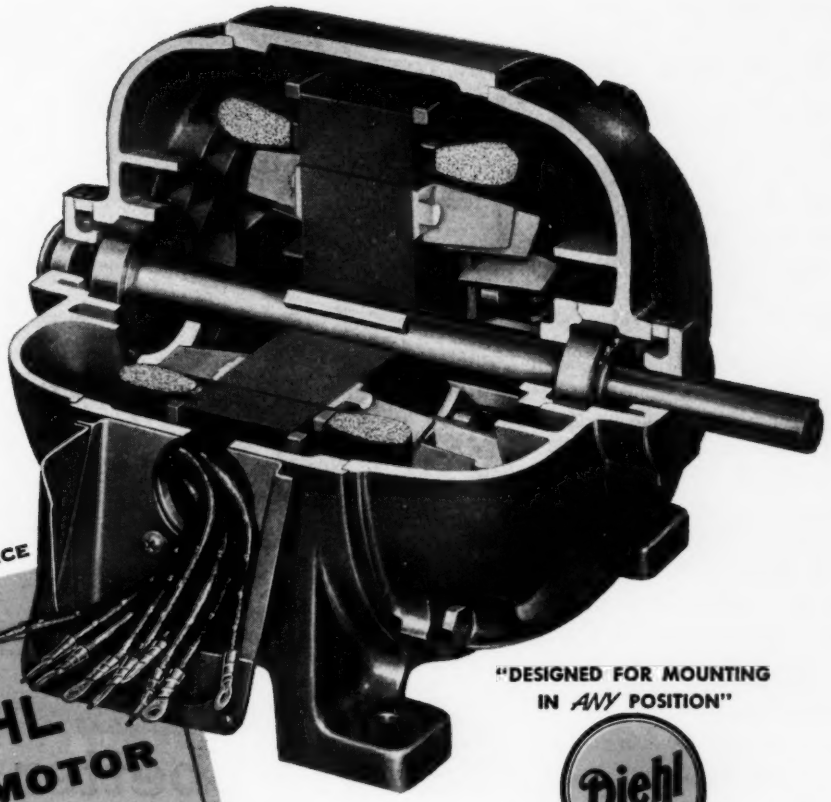
TAPER-LOCK SHEAVES


DODGE-TIMKEN PILLOW BLOCKS

Call the Transmissioneer, your local Dodge Distributor. Factory trained by Dodge, he can give you valuable assistance on new, cost-saving methods. Look for his name under "Power Transmission Machinery" in your classified telephone directory, or write us.

TOPS IN QUALITY
COMPETITIVE IN PRICE

SPECIFY THE New DIEHL TYPE "D" MOTOR

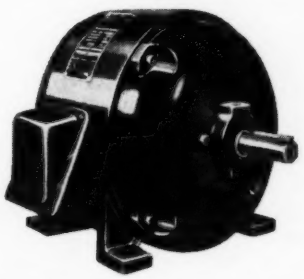


"DESIGNED FOR MOUNTING IN *ANY* POSITION"

Diehl

...here's 12 reasons why

- Most Advanced Slot Insulation
- Machine Fitted Stator
- Rotor Keyed to Shaft
- New High Dielectric Insulated Stator Windings
- Permanently Numbered Leads
- Conduit Box, An Electrician's Delight
- Centrifugally Cast, High Density Rotor Windings
- Rugged Stress-Relieved End-Covers
- New Pre-lubricated Heavy Duty Ball Bearings
- Locked-in Ball Bearing
- Dual Ventilation System
- Extra Strong Cast Iron Frame



Designed and engineered for more efficient performance. Smaller in size, lighter in weight and quieter in operation.

Consult our engineers before writing your specifications and get the benefit of 68 years of experience in the design and manufacture of general and special purpose motors

Diehl motors will still be available in old NEMA Standard frame sizes for interchange and replacement.

DIEHL MANUFACTURING COMPANY
Electrical Division of THE SINGER MANUFACTURING COMPANY
Finderne Plant, SOMERVILLE, N. J.

Please send me the following bulletins

☐ New Type "D" Motor Bulletin No. TW3304
☐ Consolidated Catalog & Price List No. TW3310

Name_____
Company_____
Street_____
City_____ State_____

INTEGRAL AND FRACTIONAL HORSEPOWER MOTORS ARE AVAILABLE IN A WIDE RANGE OF TYPES AND SIZES

 For more information, write direct or use Reader Service post card.

From one source . . . any instrumentation you need

When it comes to measurement and control, every industrial process is different. Each demands its own combination of accuracy, economy, instrument ranges, and all the numerous other characteristics that are peculiar to the individual application.

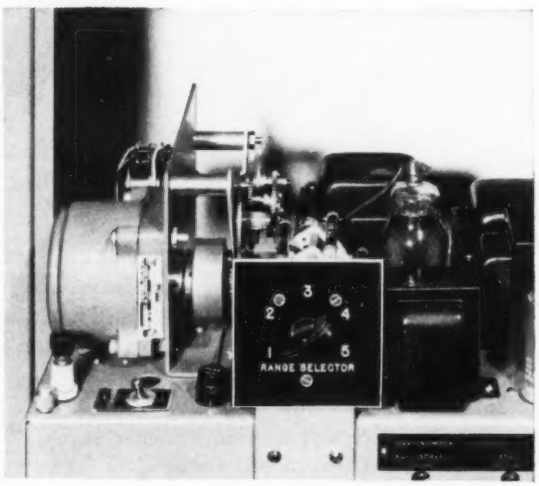
No single instrument and its accessories could possibly fit every process. So Honeywell makes a broad variety of measuring and controlling equipment that spreads across a tremendous range of applications.

The advantages are two-fold. First, you can get all the instrumentation your process requires from a single source, so there is undivided responsibility for the complete installation. And second, you are assured that the equipment selected for your process is recommended without bias . . . neither over-sells nor under-equips . . . needs no stretching, squeezing or compromising to fit it to its assignment.

This versatile family includes *ElectroniK* indicators, recorders and controllers in circular and strip chart models, applicable to temperature, pressure, pH, power and dozens of other variables; square root flow meters for control applications; evenly graduated flow meters for cost accounting; thermometers, pressure gauges and liquid level meters; *Pyr-O-Vane* millivoltmeter controllers. Especially useful for graphic panels are the *Tel-O-Set* miniature indicators, recorders and controllers. Electric and pneumatic control systems range from the simplest to the most complex, including automatic program controls and complete systems developed for particular processes.

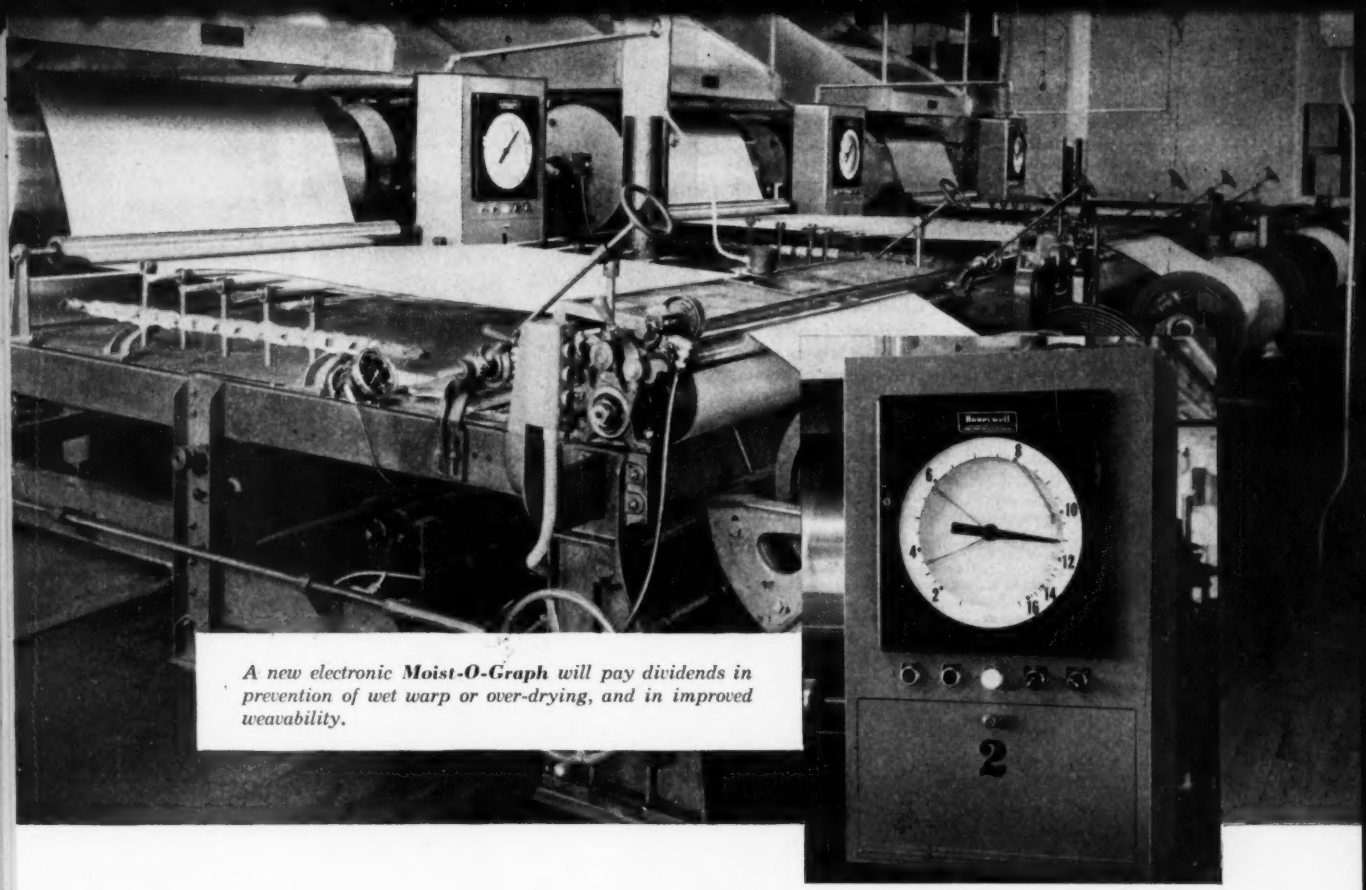
Working with these instruments is a full choice of primary elements . . . thermocouples, *Radiamatic* radiation elements, pressure-type and electrical resistance thermal systems, flow meter bodies, pH cells and many others. For final control elements, you can choose from a wide range of electric motorized and diaphragm operated valves. To complete the picture, there are more than 7000 non-indicating devices for controlling temperature, pressure, vacuum, liquid level and humidity . . . an unmatched variety of instrumentation made by the world's largest manufacturer of control equipment.

Modernize your slasher for better regain control . . . *with*



Range change switch lets you read per cent regain directly with any fiber, blend or size.

MEMO from:



A new electronic ***Moist-O-Graph*** *will pay dividends in prevention of wet warp or over-drying, and in improved weavability.*

the electronic Moist-O-Graph®

ONE of the most profitable modernization investments that you can make in your mill is closer control of warp moisture . . . by means of the electronic *Moist-O-Graph*. The increase in warp uniformity that you can realize will spell substantial boosts in weave room efficiency. And your slasher room production will step up, as this modern moisture-controlling instrumentation opens the path to higher machine speeds and reduced stoppages.

Today's *Moist-O-Graph* offers features that have been developed through more than fifteen years of pioneering experience in warp moisture measurement and control:

Multiple range: a turn of a dial makes the instrument direct reading for any synthetic fiber you may be processing: rayon, orlon, acetate, nylon, dacron.

Electronic measurement: the high precision and speed of modern electronic instrumentation is applied to moisture measurement.

Direct reading: the instrument indicates and records per cent regain for any fiber, blend or size . . . no need for consulting tables.

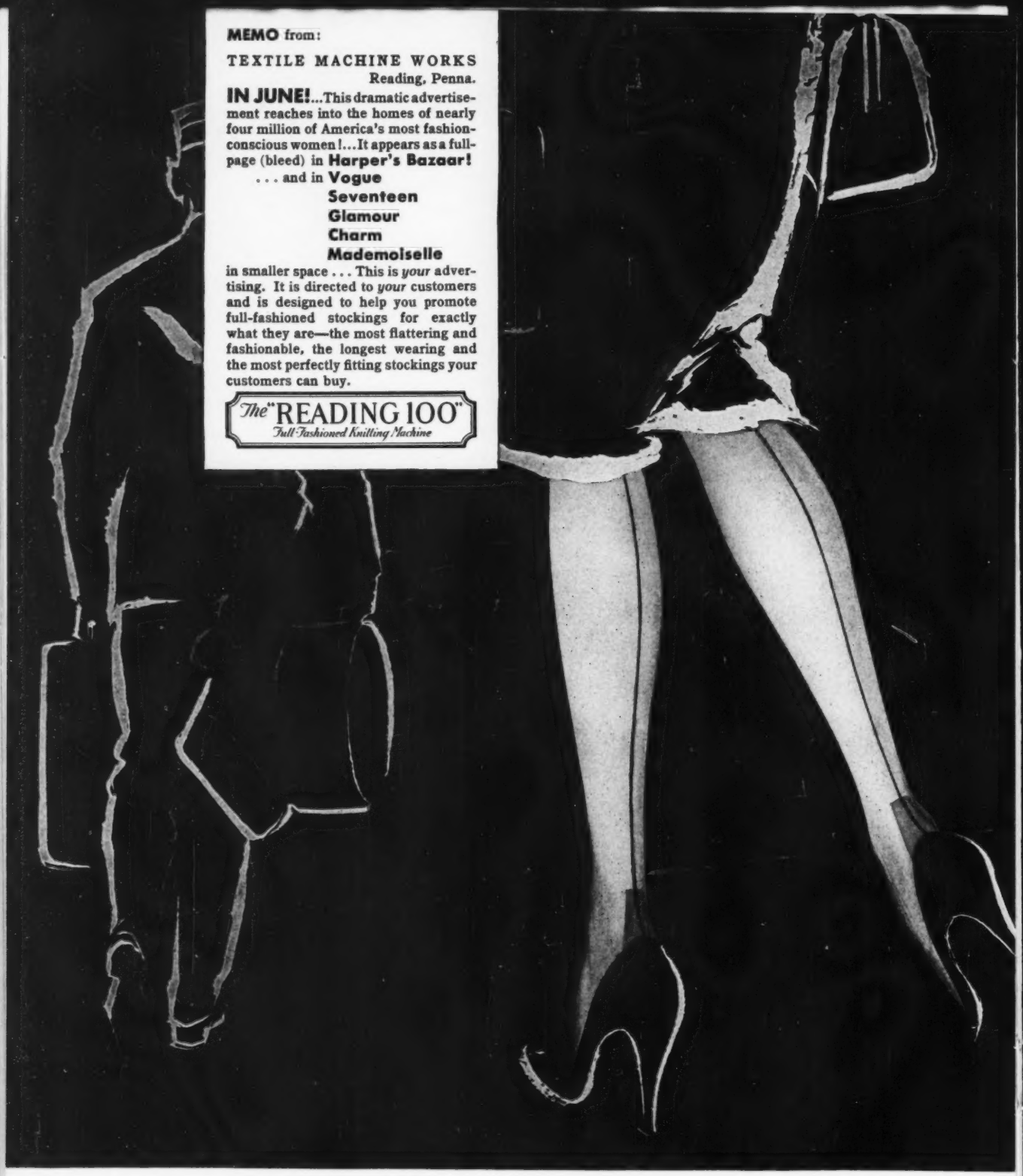
If you already have an earlier model *Moist-O-Graph*, you can bring your instrumentation up-to-date at a cost of several hundred dollars less than that of a completely new installation. You may be surprised to learn how economically you can take this worthwhile step in modernization. Ask your nearby Honeywell sales engineer to survey your installation . . . he's as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, Wayne and Windrim Avenues, Philadelphia 44, Pa.

● **REFERENCE DATA: Write for new Bulletin No. 54-66, "Automatic Regain Control of Rayon and Synthetic Fiber Slashing."**

MINNEAPOLIS **Honeywell**
BROWN INSTRUMENTS
First in Controls

For more information, write direct or use Reader Service post card.



MEMO from:

TEXTILE MACHINE WORKS
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IN JUNE!...This dramatic advertisement reaches into the homes of nearly four million of America's most fashion-conscious women!...It appears as a full-page (bleed) in **Harper's Bazaar!**
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in smaller space ... This is *your* advertising. It is directed to *your* customers and is designed to help you promote full-fashioned stockings for exactly what they are—the most flattering and fashionable, the longest wearing and the most perfectly fitting stockings your customers can buy.

The "READING 100"
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TEXTILE WORLD
May, 1954 • Vol. 104 - No. 5

How To Sell WORKLOAD CHANGES

► **To put in a workload change successfully, you have to have the cooperation of the supervisors and operators concerned.**

► **To get their cooperation, follow the eight-step procedure outlined here. Case histories show how mills apply the general procedure.**

By R. G. CARSON, JR.
Associate Professor, Textile School, Clemson College

THE HUMAN ANGLE is much more important than the engineering angle in making a workload change work. Most timestudy departments do a good job of methods improvement and timestudy; and they usually arrive at workloads that are accurate for practical purposes.

The general procedures that should be followed to insure that a change is understood and acceptable to all concerned are outlined below. The procedure can be modified to fit local conditions and individual cases.

Follow These Eight Steps

1. Methods improvements are made before the workload is set. This phase should be a cooperative venture; and the overseer, assistant overseers, and operators should be given a chance to contribute their ideas: "Let's work out together the best way of doing the job."

2. When the method has been stabilized, make sure that all operators can perform the job correctly at an acceptable rate of production. This means training each operator and shifting unsuitable operators to more suitable work. This step can be performed by a trainer instead of the timestudy man.

3. Timestudies for rate-setting purposes are made after Step 2 has been completed, or at least completed for most of the operators. The studies are made openly, with the full knowledge of the supervisors and operators. The operator should have an opportunity to ask questions before and after the study and see the study if he wants to.

4. The workload is carefully calculated, and the results are checked against production records from the early stages of the study, from the payroll department, or from other sources. As far as possible, the workload should be fairly and accurately set before it is released; in case of doubt, make more studies. Keep a complete record of the method used and the studies made.

5. Explain the workload to the departmental supervisors; the plant superintendent may want to be in on this explanation. Cover what the workload means in terms of produc-

tion per operator, pay per hour, and cost per unit. There are questions to discuss and decisions to make: What is going to happen to surplus operators? How fast can the change be made? What pay guarantees are going to be used during the change? How can production be maintained during the change-over? Foresee as many of the problems as possible and be prepared with the solutions.

6. Explain the workload to the operators in the presence of the overseer or second hand. In some cases, the overseer might explain the workload change, with the timestudy man present to answer detailed technical questions. All operators should be given the opportunity to ask questions. Examples of the production achieved during the studies are often useful during this session. Also useful are simplified tables such as earnings at different levels of production worked out for each specific job. Set a date and time for the rate to go into effect.

7. Be on the job when the rate goes into effect. The timestudy man should be on the floor with the operators to see that they know their jobs and follow the right method and that materials flow smoothly to the job. He can give progress reports periodically during the day and at the end of the shift. He should stay with the job until the operators know how to compute their earnings and production and how to pace themselves over the length of the shift.

8. Check up on the job occasionally. Go by at the end of the shift and talk with the operators. Check the payroll records daily and weekly. Such checks can be reduced after things are running smoothly, but they should never be eliminated entirely.

How an individual accepts the workload changes is affected by the personnel department, the suggestion system, the incentive possibilities on the job, the guarantees used with the rate, the past history of the company, the employee's immediate supervisor, and the general attitude of the mill management.

No technique can be considered entirely by itself; the procedure used has to be in character with the company. What will work under one set of circumstances will not necessarily work under all circumstances. A procedure that is technically bad will work if unusual trust exists between management and the hourly rated employees. The reverse is also true.

A procedure along the lines outlined here helps to build up the desired trust and often saves months of expensive trial and error before full acceptance of a new workload is achieved.

FIVE CASE HISTORIES

CASE NO. 1
Supervisors Cooperate

All overseers and shift foremen have participated in a 16-hr. course on timestudy; so they are familiar with the principles involved.

New methods are worked out jointly by the timestudy department and the overseer. Studies are made and workloads are set working through the departmental supervisor. Possible assignments are worked out on paper.

Channels for appeal are set up in

CASE NO. 2
Sell Supervisors First

This company, with several mills, works on the belief that if the departmental supervisors are sold, the rest is easy. Its approach to the problem is keyed to the overseer.

Methods improvements are made during the timestudy, with the cooperation of the overseer. The

CASE NO. 3
Supervisors In From Start

The timestudy department's first contact in the production department is made through the overseer and the superintendent. The timestudy department outlines for the supervisors what is to be done.

The overseer, second hand, and timestudy man pick the operators with whom to start the studies. All three are present at the initial conference with the operator. Methods and timestudy procedures are briefly explained to the operators during the first session.

Timestudies for methods-improve-

CASE NO. 4
Suggestions Are Explored

The first step in this mill is to make methods improvements. All suggestions made by the supervisors and operators are thoroughly explored. The resulting method, if acceptable to all concerned, is set as the standard method. Operators are instructed and trained in this method. Detailed job descriptions,

CASE NO. 5
Don't Do It This Way

Timestudies are made; then operators are told how much they must do on any specific job. The method is left to the operator; each operator must figure out his own best method.

How does actual practice compare with the general procedure that is recommended? Here are actual case histories of how five of the better-known textile plants in the South (with the names omitted) go about making a workload change.

case two departments differ about a method. These channels seldom are used because both groups usually feel it is better to work out a mutually acceptable solution on the overseer-timestudy-man level.

The whole setup is gone over with the foreman, the superintendent, and the general superintendent. Then the foreman calls the operators together and goes over the workload with them. If it is complicated, a member of the timestudy department might answer detailed questions.

All operators are trained in the new method. Then the job is left to settle down so that all operators can become skilled in the new method. If excess operators result from the method change, this settling-down period is used to gradually tighten assignments; extra personnel are shifted to other jobs as jobs become available. Results are checked against the payroll records.

Also, earnings are calculated daily for each operator independently of the payroll department. If the operators do not earn at the expected level within the first week, 8-hr. studies are made. These studies usually disclose the cause of low earnings; in exceptional cases, the cause is not found during the first study and further studies have to be made.

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method adopted is one that all operators are capable of following. A special training division teaches each operator the new method. The workload is installed, operator by operator, as the new method is taught. A trainer works with each operator until the operator can perform the job correctly, keep up the assignment, and have the prescribed time for rest.

Departmental supervisors are given the details of the timestudies and workload calculations; but unless an operator asks for it, the information given to him is not quite so detailed. However, operators are encouraged to ask questions about the timestudy procedure, both of their supervisors and the timestudy man. Conferences between the standards man and an operator are always held in the presence of a supervisor to keep problems within the department.

---

ment purposes are made. Then the new method is developed in conjunction with the operator, second hand, and overseer. Everybody works on the method until all agree that the best one that is practical in the circumstances has been found.

All operators on all shifts are trained in the new method. The timestudy department does the training. Then timestudies for rate-setting purposes are made on the trained operators, and the workload is computed.

A conference with the general superintendent and other top men is held, but the overseer is not included. At this conference, equipment, displaced personnel, and earning problems are thrashed out and settled. Next, the workload is discussed with the overseer and all second hands.

The operators on one shift are called together and a round-table discussion of the rate is held. The second hand is present, and all questions are answered. A notice posted on the bulletin board gives the date of the change in workload or piece rate (usually three days to a week later) and the essentials of the change. Workload guarantees are published or are posted on the bulletin board.

When the workload goes into effect, a timestudy man works on each shift with the operators needing help. These men stay until all operators can keep the assignment running correctly with the prescribed amount of rest time.

Jobs are later spot checked by talks with operators, observations while walking through the department, and checks on earnings.

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including drawings of machinery and materials locations, are part of the timestudy record.

Timestudies for rate-setting purposes are made, and a piece rate and job assignment are calculated. The rate is discussed with the departmental supervisor, who initials the rate sheet as evidence of his understanding and acceptance of the rate.

A representative of the timestudy department discusses the rate with the operators. For the discussion, operators are called together in small groups, with the second hand or overseer present. This procedure is carried out for all operators on all shifts.

Copies of the rate sheet are sent to the overseer and each second hand, as well as the payroll and cost departments.

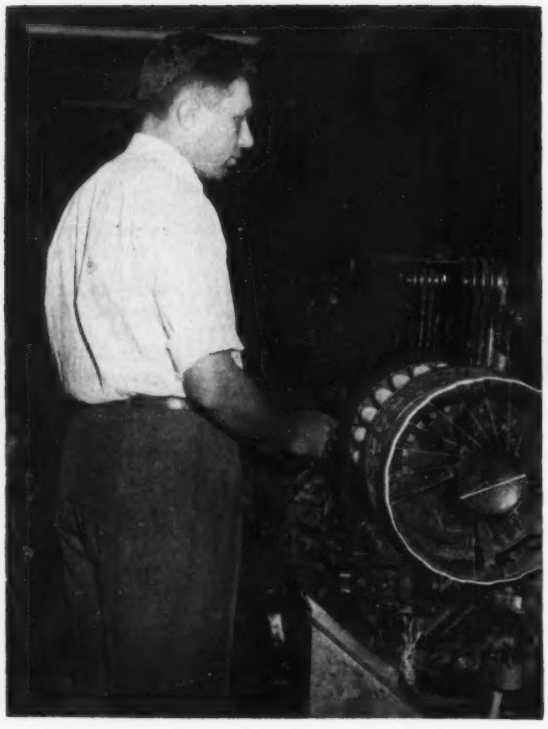
Production under the new rate is checked daily from the payroll records. If necessary, a series of follow-up studies is made if production and earnings aren't right.

Often, operators are unable to make out under the new rate. In that case, the job is restudied and a more liberal rate is set. In some cases, the operators are unable to make out on the second rate; so a third series of studies is made and the rate further liberalized.

The reverse also occasionally happens. The first rate set is too liberal; so it is tightened after a series of studies. As the head of the timestudy department points out, "You can't expect to hit them all right on the first try."

This mill demonstrates that procedures used 15 years ago are still followed by some mills.

THE SUPERVISOR (and author) stops at the battery end of the first loom in a weaver's alley and checks the changing mechanism.



THE SAME POSITION is held by the supervisor as he moves his eyes upward to check the pick counter for a production reading.

10 Steps To Help Supervisors INSPECT 300 LOOMS PER HOUR

▶ Weavers and loomfixers should do most of the inspecting, but weaver-room supervisors must set an example and show running defects to weavers and loomfixers. Here are some time-saving methods to use in inspecting cloth, checking production, and inspecting looms for faults that contribute to bad cloth.

By WILMER C. WESTBROOK
Consulting Editor, TEXTILE WORLD

THE BEST WAY FOR A weaving supervisor to know just what is happening in his department is to make systematic loom-by-loom inspections. Unless this inspection is made in a logical and orderly manner, it is easy to overlook many of the things needing attention. It is also possible to spend too much time and energy repeating certain steps and motions.

Why Inspection Is Needed

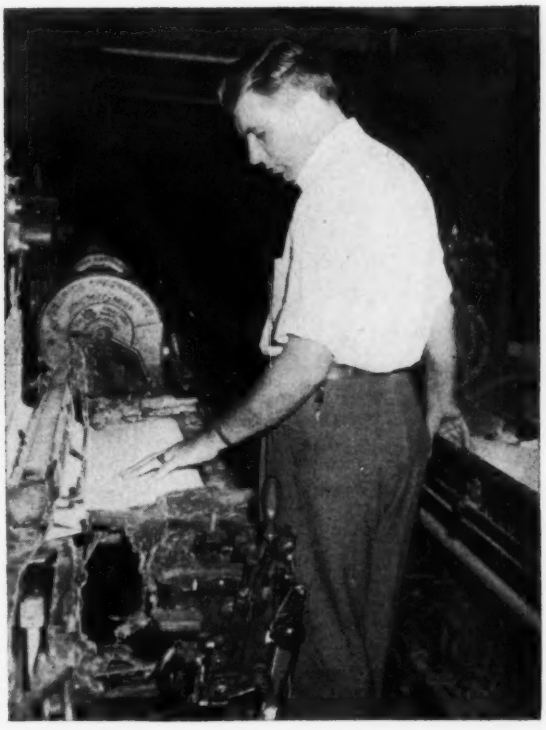
The major purposes of such an inspection are to see that the cloth is being woven correctly, that each loom is operating as it should, and that the stock in process is of the right quality and in sufficient quantity.

Many other things can be observed such as the condition of the floor, general housekeeping, safety hazards, and employee actions. This is also a good time to talk with employees. A word of praise, caution, or advice to employees encountered will do much to cement good employer-employee relations.

The weaving inspection can be made with a minimum of wasted time or energy. The movements of the eyes, hands, and feet are such that there is no need of quick shifting, turning, or back tracking. After some practice, the orderly sequence of these motions will become almost mechanical; and the main items that require frequent inspection will not be overlooked. Of course, the procedure can be modified to meet local conditions; but in planning his inspections, the supervisor should keep in mind the regular sequence of motions.

Looms weaving cloth up to 45 ins. wide can be inspected at the rate of one loom every 10 secs. with this method. After allowance is made for stopping any looms found to be needing attention, talking to the operators, etc., a supervisor should be able to inspect about 300 looms an hour.

ONLY ONE STEP is taken to inspect the filling stop motion and right-hand temple. Cloth is checked with finger tips and eyes.



A BACKWARD STEP and a turn puts the supervisor in the correct position to inspect the second loom in reverse order.

Such inspections, if regularly made, will pay big dividends in better personnel relations, closer control of materials, higher production, better cloth, and improved loom maintenance. Ten steps are included in the inspection.

Step No. 1

Enter the weaver's alley and glance into the quill box of the loom on your right. If a filling feeler is used, look for imperfect bunches, quills from which all the filling is exhausted, and quills that have been ejected too soon. A broken quill in the box indicates a fault in the filling-changing mechanism.

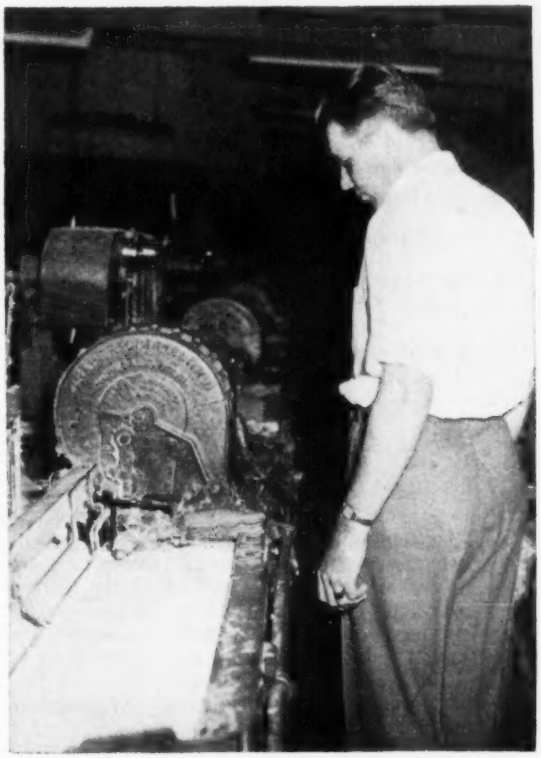
Step No. 2

Look at the Stafford thread cutter. The cutter should be closed and have a single strand of filling yarn hanging from it. The end should be cut cleanly and be standing upright in the cutter. If the thread cutter shows any movement except during the actual transfer of filling, an improper setting is indicated; and the knives are probably striking the front box plate or shuttle. Any malfunction of the thread cutter should be checked at once to prevent jerk-backs.

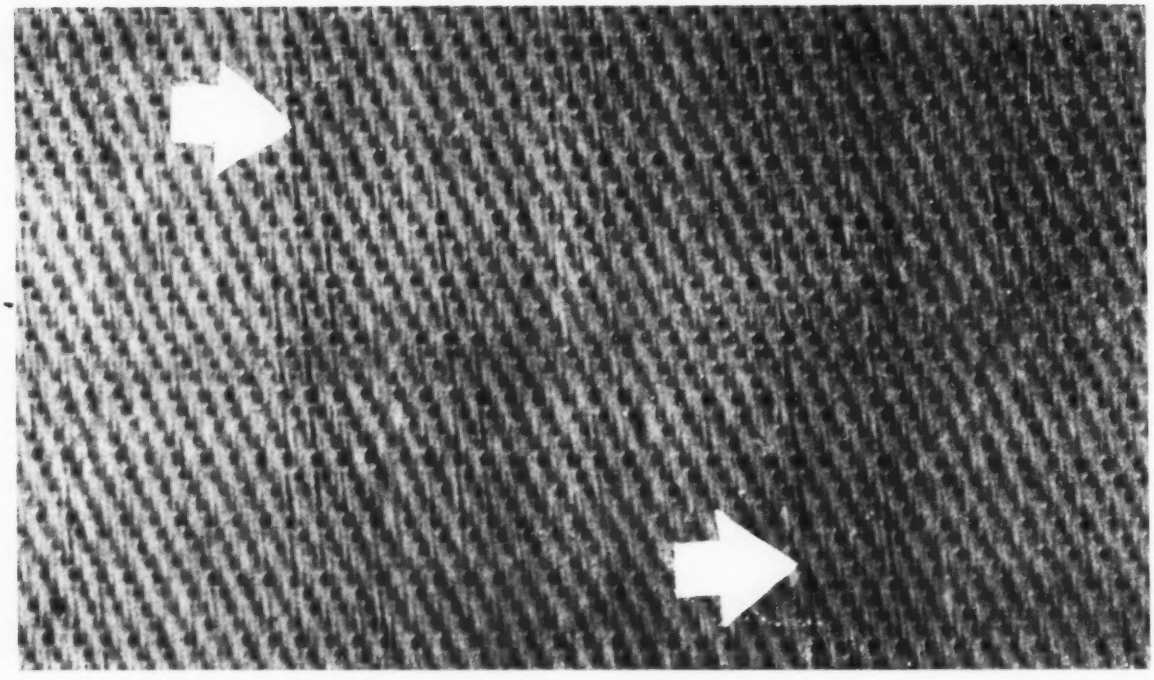
Step No. 3

Move the eyes upward and inspect the filling in the battery. Look for badly formed quills, quills improperly placed, and filling yarn broken or misplaced on the thread guide.

CONTINUED ON PAGE 174



THE INSPECTION is completed on two looms just 10 steps and 20 secs. after it is begun. With normal interference, 300 looms per hour can be inspected.



REED MARKS in the gray goods.....

Proper FINISHING To Rid

The finisher who has a choice of finishing methods and materials can make acceptable fabrics from apparent seconds.

- **Proper preparation minimizes reed marks**
- **Color and depth of shade influence the uniform appearance of a fabric**
- **Backfilling, calendering, embossing, and compressive shrinkage improve reedy cloth.**

By C. NORRIS RABOLD, Consulting Editor, TEXTILE WORLD

REED MARKS, the most common cause of warp streaks, and thick and thin places in the warp may be practically eliminated by the use of proper finishing methods.

Not noticeable in the gray cloth, these streaks may be very conspicuous in the finished fabric, especially in some dyed materials. A white fabric containing coarse ends and high ends appear more uniform than a similar dyed fabric.

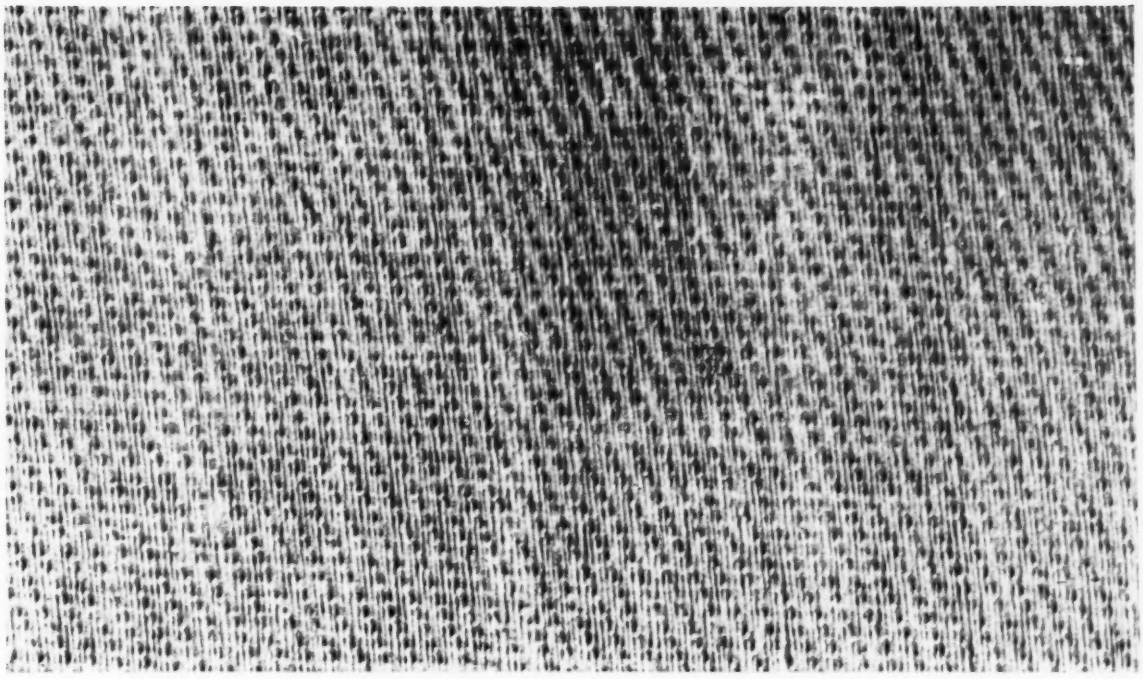
Although warp streaks can be found in almost any cotton or synthetic construction, they are most prominent in low-count broadcloths, poplins, sheetings, jeans, and lightweight twills. The jeans and twills are particularly difficult to produce without reed marks showing in the finished goods.

Preparation Affects Quality

For maximum uniformity, the fabric must be properly prepared so that it is endowed with strong absorptive qualities. A nonabsorbent fabric is not penetrated by the dye, which remains on the surface; here, thick and thin places will be highlighted.

Warp streaks are generally less apparent in bleached goods than in dyed fabrics. In mercerized cloth, especially white goods, there is no thinning out of the construction, and no emphasis is directed to the difference between the thick and thin places. However, heavy constructions scheduled to be dyed can be mercerized to advantage, for the dyes will then level and penetrate better and minimize any existing reedy condition. Mercerization of a lightweight fabric, however, causes conspicuous reed marks; on the other hand, the unmercerized dyed cloth would have such a toppy or uneven appearance that reed marks seem to be the least of two evils.

Finished width is an important factor in producing even cloth. If the finisher tries for too great a finished width, the goods in mercerization must be pulled as wide as possible, and the contrast is increased between the thick and thin places in the warp.



. . . . . DISAPPEAR in a properly finished fabric

Fabrics of REED MARKS

Printing Conceals Streaks

The correct print pattern camouflages many gray cloth defects, especially reed marks. When low-count broadcloths with reed marks are printed with all-over peg patterns or fine-line stripes, the warp streaks may be completely unnoticeable. Other over-all patterns, too, made up of small checks or other small objects, cover unevenness well. The concealing effect of dark blotch patterns may be effective; but light blotch patterns, especially when the blotch is large, tend to emphasize reed streaks, as do patterns with a wide expanse of white.

Dye Choice Is Critical

Direct and developed colors level well and impart a more solid appearance than the other dye classes. Vat colors and the azoics also level well on well-prepared fabrics, but reedy cloth dyed with sulfur colors is poor in appearance.

Since most fabrics today are dyed with vat, azoic, or sulfur dyes, it is preferable to dye reedy material with the vat colors or azoics.

Some colors, more than others, emphasize reed marks. For example, blues, greens, khakis, tans, and grays highlight reed marks. On the other hand, the reediness of the fabric is de-emphasized by yellow, gold, and orange, which usually level well.

Reedy goods dyed in dark shades like navy blue, dark brown, dark green, or black have a better appearance than the similar fabrics dyed in pastel or medium shades. Naphthol reds and maroons, classified as heavy shades, improve the appearance of reedy material. Sulfur colors, in all shades and depths, tend to emphasize warp streaks, or at least do not make them less obvious; their application in a soluble or reduced form is probably the reason for this. Reed marks are generally emphasized by the medium-shade range, with very light shades and very heavy shades lessening reediness.

Proper dye penetration and leveling is an important factor in reducing the effect of reed marks. Since the bulk of material today is run on continuous dye ranges, there is a tendency to run the dye range as fast as possible for maximum production. Sometimes, slowing down the range improves the appearance of a reedy cloth.

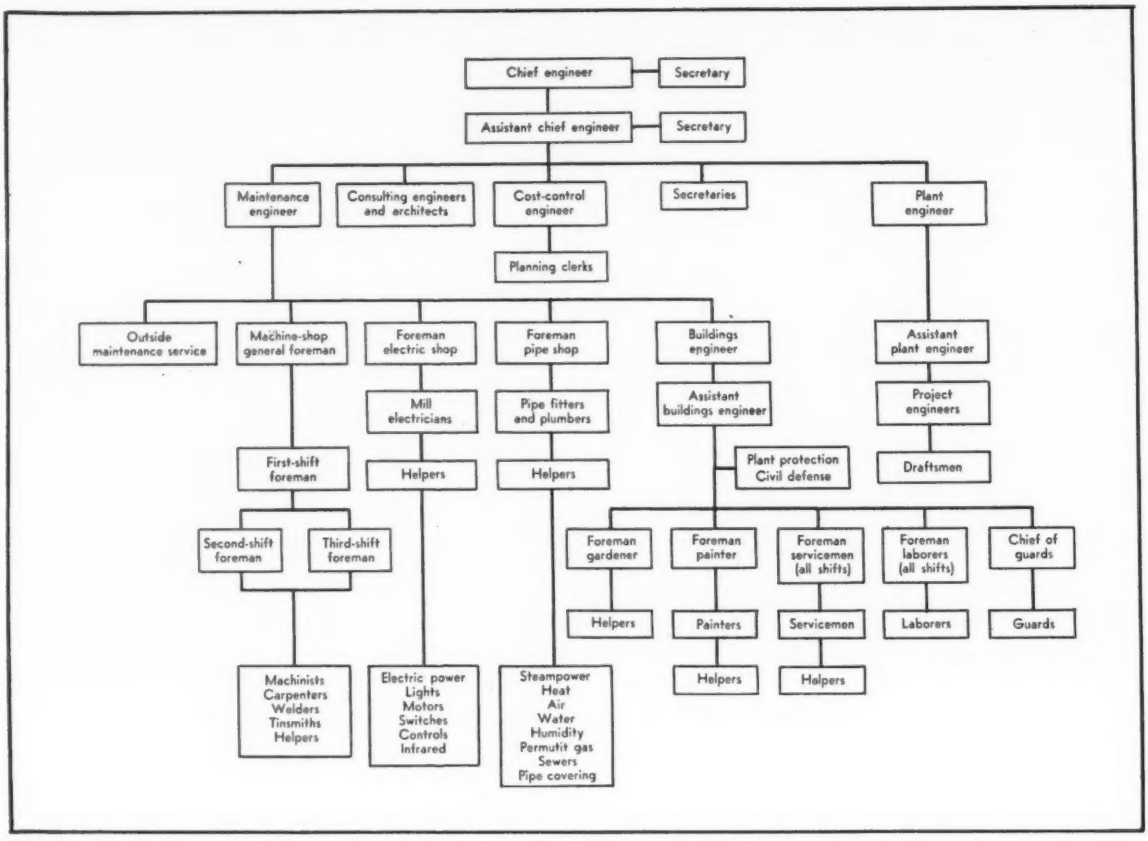
Improvements by Finishing

Finishing a low-count broadcloth, print cloth, sheeting, or jean by back filling improves the appearance of streaked cloth by filling in the open spaces.

Today many embossed fabrics are being produced. Bad warp streaks in gray fabrics can be covered very well by an embossed pattern.

A chase finish is an excellent method for closing up goods that are open and reedy. This operation tends to realign the warp threads and level out the unevenness in the warp.

Compressive shrinkage is preferred to an operation on a frame or plain calender. With compressive shrinkage, the goods are compressed and the open places close up.



ORGANIZATION AT ALBANY FELT starts with the chief engineer and moves downward through an assistant and maintenance engineer to foremen, who each have about 10 men.

Top-Notch PLANT MAINTENANCE *Made a Show Place of a Mill*

▶ This material was presented at the Fifth Plant Maintenance Conference by George A. Estabrook, chief engineer, Albany Felt Co., Albany, N. Y., who led the textile round-table session. Valuable information from many other mills was also given, but this material gives a complete story of the maintenance setup at one plant.

MAINTENANCE AT OUR MILL is extended throughout all production departments. We have a large number of supervisors and employees, but our over-all plant costs are still in line with other mills processing yarns and weaving the same types of materials.

How We Are Organized

Our maintenance department begins with a chief engineer and assistant chief engineer. Both men have secretaries. The maintenance engineer is next below in authority, and he is really the key man in the organizational setup.

A consulting engineer and architects, cost-control engineer, and plant engineer are parallel with the maintenance engineer in authority. They are all monthly salaried men and do not receive extra pay for overtime.

The maintenance engineer has direct supervision over all shops both outside and inside the plant; and in addition, he does a lot of work on looms, cards, and other production machines.

The maintenance engineer is really a buildings superintendent. He has foremen on all shifts. There is a foreman for every 10 employees except for electricians; and there is a foreman for every five electricians.

Our mill has 750,000 sq. ft. of floor area in 12 buildings that are three, four, and five stories tall. We have 1,000 employees, and 120 of them are maintenance employees. Of the 120, 50 are craftsmen; and the other 70 are builders, painters, guards, etc. We run three shifts six and seven days a week.

Loom Inspection

	A	B	C	F.C.
Breastbeam and protection assembly				
Breastbeam	✓			
Breast plate	✓			
Knock-off lever brackets	✓			
Knock-off levers	✓			
Protector rod	✓			
Protector-rod daggers		✓		
Protector-rod stands	✓			
Total				
Lay motion				
Lay-foot pins		✓		
Rocker-arm bearings		✓		
Race plate	✓			
Reed cap	✓			
Reed back stay		✓		
Reed fastenings		✓		
Total				
General				
Handwheels				
Right-hand loom side			✓	
Left-hand loom side		✓		
Right-hand lay side				
Left-hand lay side				
Guards	✓			
Head-motion arch	✓			
Multiplying gears		✓		
Temples		✓		
Total				

Loom Condition (Summary)

Loom condition rating	Condition points: Total	Lost	Loss rate	Loss	Allowances	Net points
Drive assembly	10		1.0			
Shipper assembly	5		1.0			
Take-up assembly	25		2.5			
Protector assembly	5		1.5			
Head motion	20		1.0			
Lay motion	5		1.5			
Picking motion	10		1.5			
Let-off motion	15		5.5			
General	5		1.5			
Total	100					

Notes: A Good condition; B Worn, but servicable; C Badly worn or broken; Fixers credits Basis for fixers' incentive bonus

Remarks:

MAINTENANCE MECHANICS inspect looms by several checklists. Then the weave-room foreman and machine-shop foreman get together to decide when a faulty loom will be fixed.

Men Can Change Jobs Quickly

The organization below the maintenance engineer is really flexible because every man in the setup is prepared to swap jobs at a moment's notice, fill in for an absent supervisor or craftsman, or advance in the organization.

The foremen of some of the departments are: foreman of outside maintenance service, machine-shop general foreman, electric-shop foreman, pipe-shop foreman, building engineer, and others. All these foremen are weekly salaried men and receive extra pay for overtime.

As an example of part of the work supervised by the foremen, the foreman of the pipe shop covers all pipes. This work was formerly done by the maintenance engineer and outside contractors, but the work was not satisfactory because a lot of heat was wasted through bad covering before the pipes were inspected and the contractor called in.

Two service men spend most of their time covering the pipes. When there is not enough pipe-covering

CONTINUED ON PAGE 156

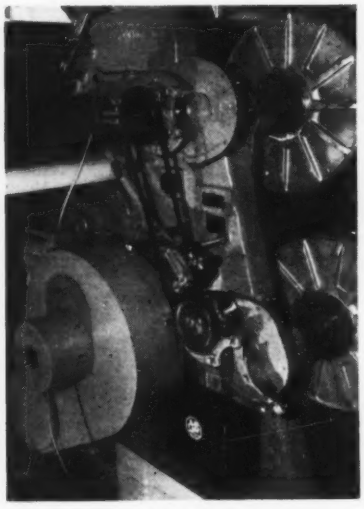
Motor No.	Motor Data: Equipment No.	Equipment	Department
E 770	443	No. 3 Kicker	Finishing

Horsepower	10	
Make	G.E.	
Speed	870	
Serial No.	3880713	
Type	KT 312	
Form	B	
Model	4893	
Voltage	220	
Type of drive	Belt	
Test data		Date
Loaded 11.2 to 16.8 hp. Power factor 85%		6/20/52
Checked	OK	1/4/53
Loaded	12.1 hp.	7/1/53
Loaded 11.8 hp. Power factor 86%		12/20/53

MACHINE DATA for all production and maintenance equipment is kept on file in the chief engineer's office. Machines are checked by scheduled inspections.

ANNUAL KNITTING SECTION

FLUORESCENT LIGHTS along the front of the machine allow knitters to spot faults quickly.



TWO BOTTOM BEAMS geared together with sprockets and chain reduce waste and help quality.

RAZOR-BLADE DEVICE fixed to the machine frame cuts fabric down the center to eliminate bow.

These **Tricot Ideas** Pay Off in Better Fabric

- Fluorescent fixtures on knitting machines
- Beams geared together
- 168-in. widths cut to reduce bow
- Spring wires to separate threads

By JAMES H. BLORE, Assistant Editor, TEXTILE WORLD

Cooper Textile Mill, Wycombe, Pa., is installing several features that improve quality, increase production, and help operators to do their work better and easier.

The mill produces a wide variety of plain and fancy two-bar and three-bar tricot fabrics and a wide range of raschel fabrics. Sample machines in a separate room are used to develop new designs and styles.

Good Lighting Reduces Seconds

Fluorescent lights running across the full knitting width allow knitters to spot faults in the fabric quickly. Three brackets, made from 1½x¼-in. iron, are screwed to the machine frame to support regular single-tube light fixtures. A black shield screwed to the front of the fixture prevents light from shining in operators' eyes. Green-tinged tubes also ease the strain on operators' eyes and make for better working conditions.

Three-bar tuck fabrics made on 168-in. machines have a tendency to bow as they are drawn off the needles. Knitting two pieces of fabric by leaving out a few threads in the center of the guide bars also tends to bow the fabric.

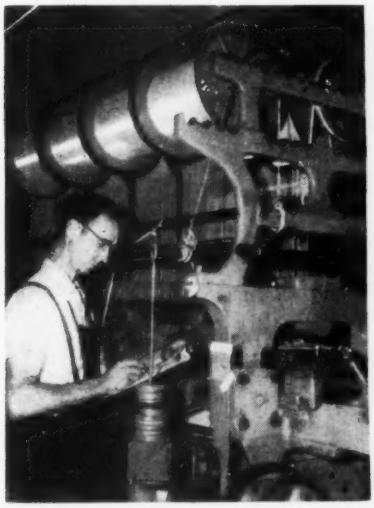
Cooper Textile Mill has solved this problem by leaving a few ends out of the front bar. As the fabric is drawn to the take-up rolls, the remaining threads in the back bar are cut by a single-edge razor blade fixed to a bracket screwed to the machine frame.

Brackets Simplify Threading

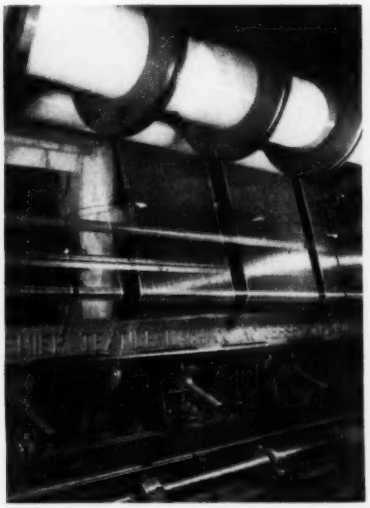
A second bracket screwed to each end frame supports two lengths of 1-in. angle iron on which to hang the front and middle bars while the back bar is being threaded. Hooks are screwed to the angle iron, opposite the guide-bar brackets, to support the guide bars.

This attachment makes threading much easier for the operator. After the back bar is threaded, the middle bar is put into position and threaded. The front guide bar is then put in place and threaded.

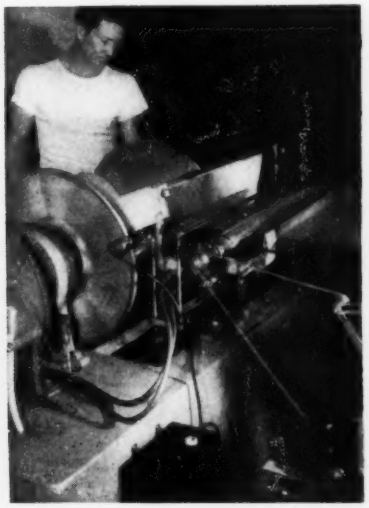
Another idea, coupling two back beams together with a chain and sprockets, produces more-even fabric and eliminates waste because the beams run out together. This idea is used on fabrics that have equal runners on two bars.



WEIGHTS on the beam shafts balance the beams, reduce shade marks, and are adjustable.



WIRE SPRINGS on the top rail prevent bobbin marks by keeping the yarns from rubbing the flanges.



A ROLLER immersed in a trough is driven by chain and sprockets to supply oil to the yarn in beaming.

The middle beam is controlled from the brake drums on the left end of the machine. Sprockets with an equal number of teeth are fixed on the right end of the middle and lower beam shafts.

Wire Separates Split Warps

A wire suspended from a hook in a bracket screwed to each end frame runs across the top warp of two-bar machines. This wire helps knitters when split warps are threaded. One-half of the warp is hung over the wire while the first half is being threaded.

Masking tape run along the top of each reed prevents ends from jumping out of the reed during smashes.

Separating wires (made from piano wire) are screwed to the tie rod of the raschel machines to prevent warps from rubbing on the beam flanges. The wires are placed below each beam flange and bent outward to guide the threads. Masking tape prevents accidents on the sharp wire ends.

Tension rods have been chrome plated to reduce friction and to prevent accumulations of size, rust, and dirt. Yarn is run directly to the guides without threading through the guide-bar reed. This practice allows the dauber to be used and reduces threading time.

A bracket fixed to the end of the pattern-wheel shaft turns a revolution counter fixed to the machine frame under the shaft to keep an accurate control of the fabric being knitted.

A device on the end of the beam shaft balances the beams to a fine degree to reduce shade marks on the fabric. A shaft welded to the collar holds several weights. These weights are adjusted to the required balance, and the collar is clamped tightly to the shaft in the required position by a set-screw.

A cardboard tube turning on the camshaft of the raschel machines is used to take up extra warp threads not knitted in the cloth. A washer wired to the upper shaft guides the threads together on the tube.

Rubber yarn is frequently run on the raschel machines. The rubber size deposits are cleaned from the needle bar and guide bars with a kerosene-soaked brush at the end of every piece.

Warping Conditions Are Ideal

The warping section is controlled at 81° F. and 65% r.h. A static eliminator in front of the fan reed helps reduce static. The 15-den. and 40-den. yarns are run at 300 yds. per min. with 6-gr. tension on each yarn.

McBride mercury stop motions are used on the creel containing 15-den. yarn, and the battery is constantly

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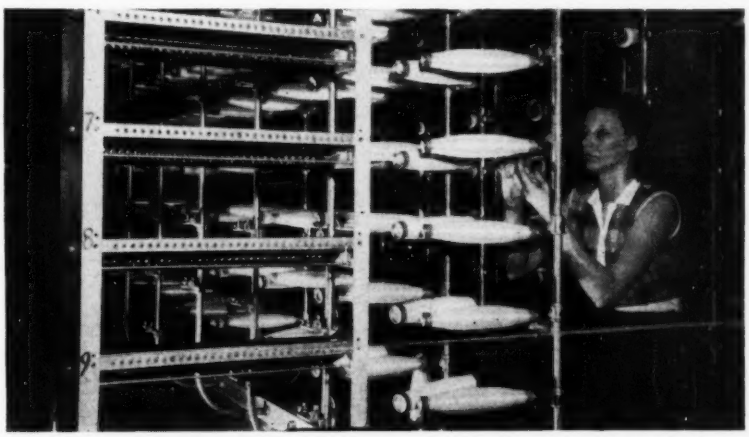


ONE GIRL keeps this creel replenished with 15-den. nylon. She leaves a yarn tail of 3 ins.

A KNITTER-HELPER SYSTEM is used on 51-gauge machines. The helper trains by working with the knitter for three weeks on one machine.

How To Keep **Full-Fashioned Costs** Low

To produce top-quality hosiery at low cost, Vanette Hosiery Mills—

- **Has a knitter-helper team on 51-gauge machines**
- **Uses a bulletin-board checklist for seaming and inspecting quality**
- **Sorts imperfects into eight grades**

By H. B. LeFEAUX
Consulting Editor, TEXTILE WORLD, Superintendent, Vanette Hosiery Mills

TRYING TO MAKE a fair profit in today's full-fashioned-hosiery market is not easy. Here are some of the things that Vanette Hosiery Mills is doing to turn out a good-quality product at a low cost.

KNITTING

We point out the importance of quality and economy to our knitters. Our foreman explains how waste makes costs go up, orders go down, and working days get fewer. The knitters are shown how to handle yarn carefully and how to run the machines until less than two layers of yarn remain on the cone.

A dispenser and a jar of hand lotion are located in the knitting room for the knitters' use. They are instructed to take care of their hands and to wear gloves when they are removing stockings from the machine. These precautions reduce pull threads by 5%.

We employ teams of an experienced male knitter and a girl helper to run our 51-gauge machines. The helper works with the knitter on one machine for three weeks. At the end of the three-week period, the team is allotted two machines.

Incentive System Pays Off

We find that a set rate for the team pays off better than a piece rate for the knitter and an hourly rate for the helper. This incentive increases the helper's efficiency and production.

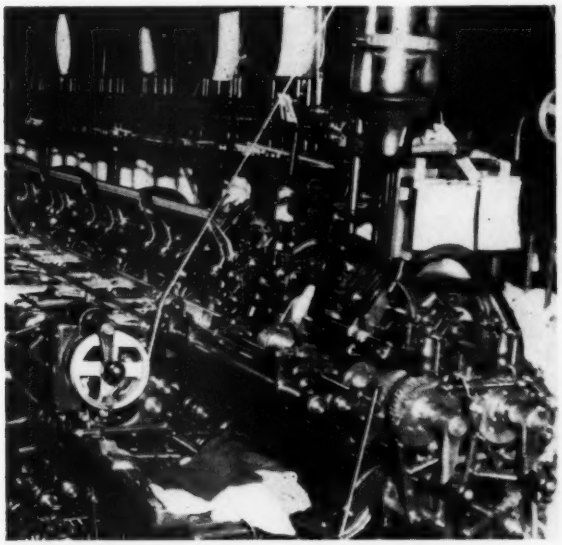
A rate of $1.00 per dozen is divided between the knitter and the helper: The knitter gets 68¾¢ and the helper 31¼¢. Their combined production is 28 doz. per shift; so the knitter earns $19.13 per shift and the helper earns $8.87 per shift.

On this double-job operation, the knitter oils needles, welt bars, points, and sinkers. We use a maintenance man to oil the other machine parts. The knitter and his helper are responsible for cleaning the table and upper parts of the machine. The maintenance man cleans parts below the table.

We do not use this system on the 60- and 66-gauge machines.

To get the best out of 66-gauge machines, knitters must have good eyesight and must be able to straighten needles accurately. Needles must always be checked before they are put in the machine.

Greater attention to cleaning and oiling must be paid 66-gauge machines.



REGAUGED 51-gauge machine is now knitting 66-gauge stockings. Production, at 12 doz. per shift, is somewhat slower than on new machines.

SEAMING MACHINE is turned 20° to the left for easier operating. The plastic chute guides seamed stockings into a tray ready for finishing.

Nylon-size deposits must be cleaned off regularly. The cleaning solution should work well with the local water.

Use Fine Oil on Jack Heads

More attention is required in choosing the correct oil for 66-gauge machines. All oscillating-shaft bearings require SAE-30 oil with a rust inhibitor. High-grade needle oil should be used on the sinker and jack heads of fine-gauge machines. Heavy oil used on these parts causes catch bars to jump, and machine damage occurs.

Refrigerated air conditioning is a must to get top efficiency on fine-gauge machines. Temperature should not be allowed to vary more than 2° F. We find that temperature and humidity controlled at 81° F. and 51% r.h. give the best working conditions for operators and machines.

Center-bed heating is more important on the finer-gauge machines. These cables can be screwed to all types of machines to eliminate the contraction and expansion of parts during shutdown periods.

SEAMING

A shortage of seamers prevails in the industry today. We've discovered that the working life of a seamer is about nine years. Production usually declines after that time. To replace the girls leaving the industry, a few

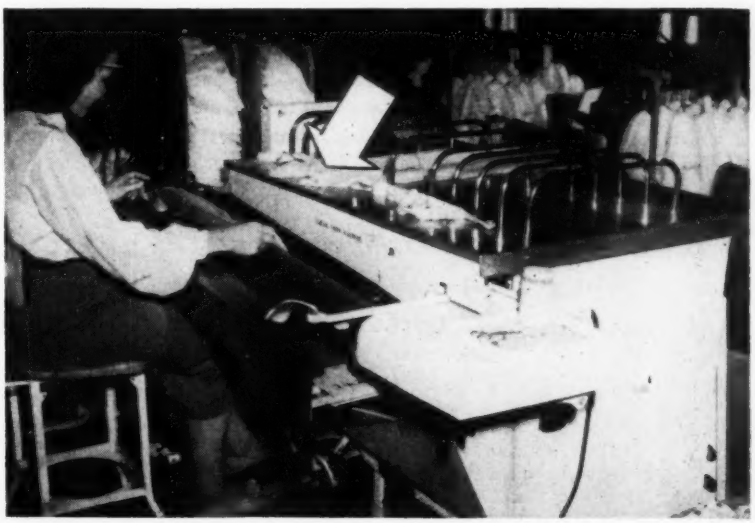
CONTINUED ON PAGE 162

Finer Hosiery Means Less Profit

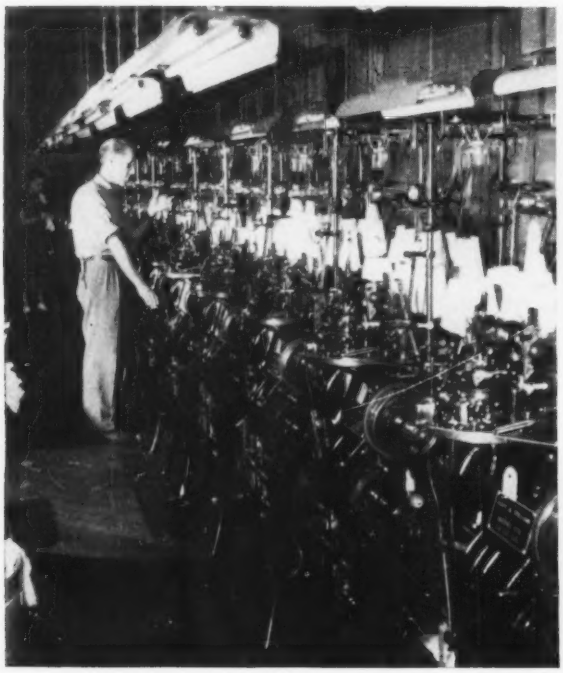
Profits drop as the demand for finer-gauge hosiery increases. The 66-gauge machines have higher needle breakage and less production than 51-gauge machines, and the price differential between hosiery from the two gauges is not great enough to compensate for the added costs.

Some mills are regauging 51-gauge machines to 66-gauge. A regauged 30-section machine will, however, produce only about 12 doz. per shift.

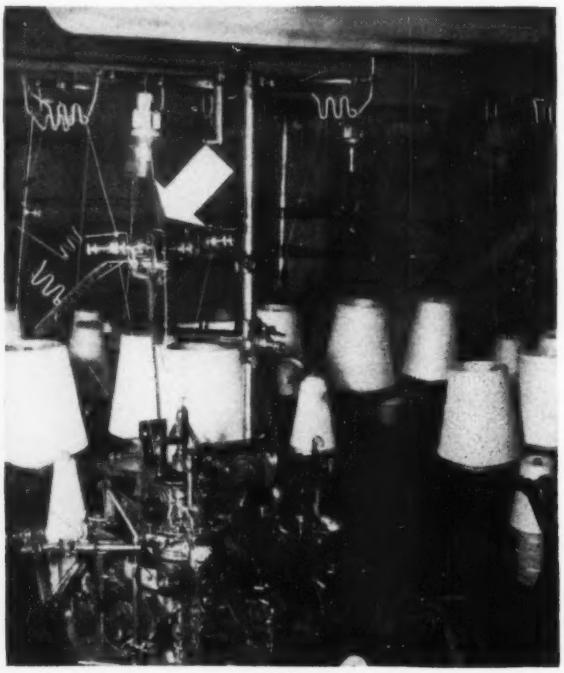
There's a lot of speculation as to the future of the 66-gauge machine. Some mill men think that 66 and 72 gauge will eventually become in-between gauges as the 48 and 54 gauges were. The 75-gauge machine is viewed with interest, but knitters believe that 8- or 10-den. yarn is necessary for this gauge.



TAPE to hold imperfects (arrow) is laid on inspecting machine. Inspectors are supplied with hand cream, scissors, and emery boards.



ONE BATTERY of 48 machines is maintained during the first shift by Fixer Horace Good. Three knitters tie the anklets in dozens after examining each one.



EXTRA TENSION DISK on heel-spring bracket keeps nylon-and-cotton yarn down on oil wick and saves waste when the front tension doesn't work correctly.

Savings in **Hosiery Labor Costs** Used for Higher-Quality Materials

• An installation of new transfer machines allows one knitter to operate 16 machines, whereas four girls were required to look after the same number of old-type machines. Part of this saving in labor costs is used for higher-quality yarns and customer-attracting transfers and stickers.

By **JAMES H. BLORE,** Assistant Editor, TEXTILE WORLD

When Athens Hosiery Mills, Athens, Tenn., installed new automatic transfer machines, two courses open for them to improve their position in the market were: (1) reduce the selling price of their anklets or (2) raise the quality of their product and sell for the same price. They chose the latter course.

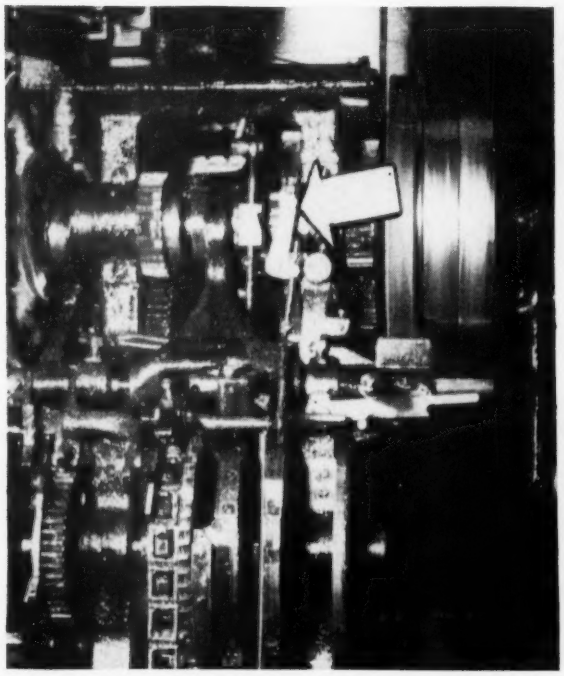
Ankle socks are now being made on new Scott & Williams E.T.R. machines. The 54-gauge 144x2¾ machines are used for sizes 6 to 7, 168x3¼ machines are used for sizes 8 and 8½, and 180x3½ machines are used for sizes 9 and 9½. Durene 30/2 yarn is used for the true-rib top and 40/2 Durene yarn for the leg and foot. A 30-den. nylon yarn is twisted with 36/2 Durene yarn and knitted in the heel and toe. The high-spliced heel is made from 80/1 mercerized yarn.

To test the new line of anklets before production began, several girls were chosen from the mill to wear the anklets and wash them under normal conditions. The socks were thoroughly tested and examined by the management before production was started.

Three Girls Run 48 Machines

Two shifts were in operation when the mill ran the hand-transfer machines, and 13 knitters ran 48 machines each shift. Three shifts are now in operation, and three girls operate the 48 new automatic machines each shift.

Nine transfer knitters were taught to run the automatic machines; the remainder of the knitters, including the rib knitters, have been transferred to other work.



BELL-CRANK LEVER is pushed toward the grooved lever each time the chain bluff is lifted to shift the belt to the slow-speed pulley at all knitting changes.

RACKED WELT is made with 80s mercerized yarn striped in for the welt courses. The dial is racked one-half needle space to the left to give this neat appearance.

TWO-COLOR TRANSFER on the sole and stickers on rib and high splice point out the quality materials and workmanship that go into each anklet.

The knitter examines each anklet as it drops from the machine. The anklet is turned inside out, and the tab yarn is removed by snipping the press-off course and pulling the draw thread. The knitter cuts out the high-splice floats and lays the anklets in a wire basket fixed to each machine frame. Each dozen pairs is then tied with a looper clip.

One fixer on each shift looks after the 48 machines. Scott & Williams H. H. fixers were trained to look after the new machines. The fixers are called to a faulty machine when a knitter lays an anklet on the dial. A fixer blows off each machine twice weekly and oils the sinkers, needles, and rack attachment twice daily.

Less Than 3% Seconds

The machines are running at 180 rpm. but are producing less than 3% seconds. Cylinder-needle breakage is about one needle per 7 doz. anklets.

A device fixed to all machines racks the dial one-half needle space to the left to give a neat-looking turn-over top welt. This neatness is further improved by striping in an 80/1 mercerized yarn for the welt courses.

Athens Hosiery Mills finds that yarn is saved because no roving courses are necessary, and the tight stitches in the transfer course look neat and even.

The machine uses a two-piece needle with a hook and cast-off in the dial, and the mill has found that P. W. hooks in the dial work better than regular hooks. The P. W. hooks are longer and reduce menders because they hold the yarn better. The stretch in the rib top is also improved.

Extra Tension Prevents Waste

Heel and toe yarns are run across a wick in an oil jar containing stainless needle oil. A tension disk screwed to the rear of the yarn-take-up bracket keeps the yarn down on the wick during heel-and-toe knitting. This tension disk also prevents waste when knots get stuck in the front tension disk because the back tension disk takes control of the yarn.

Slower speeds at all knitting changes reduce poor work because a speed changer operates on every move of the pattern drum. A grooved lever on the front of the machine is lifted every fourth cylinder revolution by a cam on the counter shaft.

A rod connects the chain bluff to a bell-crank lever. As the high chain link lifts the bluff, the rod moves the bell-crank lever toward the falling grooved lever. The bell crank catches in the groove and is pushed down. The other end of the bell-crank lever moves the belt shipper to the idle pulley.

The racking mechanism that makes the neat welt possible is a train of gears in a box on the vertical dial-drive shaft. At the first course of the welt, the dial is racked from a cam on the main pattern drum. A series of levers moves the box to change the position of the gears and move the dial. The dial racks back to its central position before the transfer takes place.

Transfers and Stickers Help

Athens Hosiery Mills believes in telling its customers what quality they are getting. A two-color transfer on the sole describes the product, a sticker points out the high-spliced heel, and a sticker on the rib describes the yarn. This dressing up, coupled with the quality appearance of the anklets, helps sales and keeps all 48 new machines running 24 hours each day.

How To Get More Out of Your **Rib-Wrap Hosiery** Machines

• A knowledge of what designs can be made and how to put them on the machine, plus proper threading and tension adjustments, can give you the originality that is always in demand for high-class hosiery

By PAUL A. FAUCHER

RIB-WRAP HOSIERY MACHINES are used for all-over designs and fancy clocks, but the full patterning scope is rarely used. Here are some points to watch when you use all pattern devices to design and knit new original patterns.

Before the design is put on the machine, ask yourself these questions:

1. Is the yarn strong, properly wound, and free of knots that might cause jack-selector breakage?
2. Is the yarn tension adjusted so that the wrapping yarns will not be buried in the fabric?
3. Are the selectors aligned with the needles, especially when the pattern does not show evenly or when the yarns miss wrapping occasionally?
4. Are empty bobbins changed at the start of a sock? Are all knots pulled through the feeders by hand and the yarns cut about ½ in. from the needles?
5. Do all yarns pass through the guides in as direct a line as possible?
6. Do you use pliers to bend selectors that need aligning? You can make a special tool to bend selectors from a round piece of steel about ⅛ in. in diameter. Cut a thin slot at one end to be inserted in the selector, and turn the other end to make a handle.

Pattern Devices Multiply Scope

Don't forget that the jack-selector butt on Wildt Model-E machines can be in one of 16 different positions. These positions correspond to the 16 horizontal rows of holes in the pattern drum to allow you to get varied designs in alternate panels. The 48 vertical rows of holes permit a design up to 48 different selections or 48 courses without dwelling or back racking.

The pattern chain used with this drum makes clock designs or patterns that need to start and stop in certain parts of the sock. This chain allows the pattern drum to rack forward or backward or idle for a number of courses.

The shog drum that moves the jack-selector cylinder sideways allows you to make designs with few wrap threads.

How To Draft the Design

To draft out a design, you can use squared paper with 10 squares to the inch. For an all-over design that does not have a pattern chain, the design area is 48 courses by the width of the panels.

Draw the idea of the design in free hand across the outlined pattern area to give a suitable length and width. Fill in the number of fingers that will be needed and the colors to be used. Transfer this sketch to another sheet of paper, and use a cross to represent a wrapping movement. Draft the design in two or three colors to give a better idea of how the finished design will appear. This procedure saves time in rethreading and rearranging the pins in the pattern drum. Number the courses, the needles, and the selectors.

Arrange the selectors according to the design. Lift the machine head to rearrange the selectors. Several different designs can be made from the same selector arrangement.

To make the illustrated all-over design in 6x3 rib on 168-needle machines, only 18 wrap yarns are required. There are 18 rib panels, 9 panels of embroidery, and 10 plain panels, including 2 plain panels at the back center. These plain panels at the back of the sock allow time for the pattern drum to change selections.

The two fingers opposite each embroidery panel are threaded with different colors. The selectors are split into two groups. Selectors No. 1 to 7 are in the first group, and No. 8 to 14 are in the second group. A panel without embroidery is between each group, and dummy selectors are placed in the inner cylinder for this panel.

Use Design To Insert Pins

On the first course of the design, the No. 5 selectors in the first group and the No. 12 selectors in the second group are required to wrap on No. 5 needles. Insert a pin in the pattern drum on the No. 1 course at the No. 5 and No. 12 position to get this selection.

On the second course of the design the same two selectors are shogged to the right one needle space by placing a pin opposite the No. 1 position of the shog drum at No. 2 course. Pins at No. 5 and No. 12 positions will cause these selectors to wrap again.

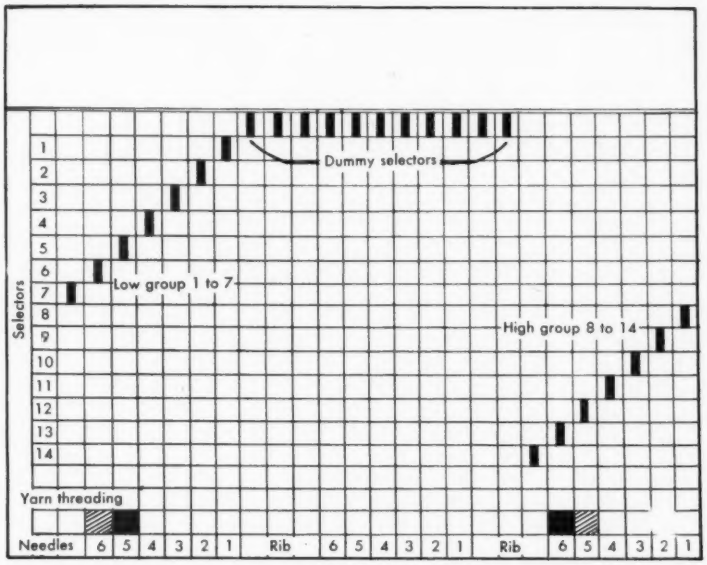
The same selection is made for the third course, but the drum is shogged to the right again. Course No. 8 requires no needles to be wrapped; so no pins are placed in the pattern drum along this course.

Course No. 9 starts with a different color; so the pins in the pattern drum are placed opposite No. 6 and No. 13 selector positions. The selectors are brought into line by a pin in the shog drum opposite course No. 9. Course No. 10 requires the same finger to be selected, but the finger is moved by placing a pin in the shog drum.

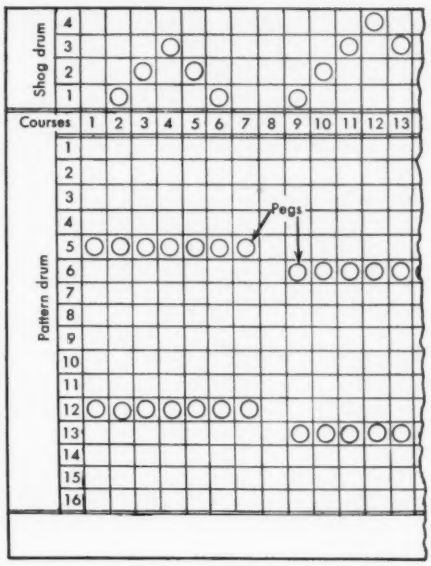
Course No. 16 is a blank course, and no pegs are required in the drum. This course is the end of the repeat, and the pin positions from Course No. 1 to Course No. 16 are duplicated around the drum.

Clocks Require Complete Design

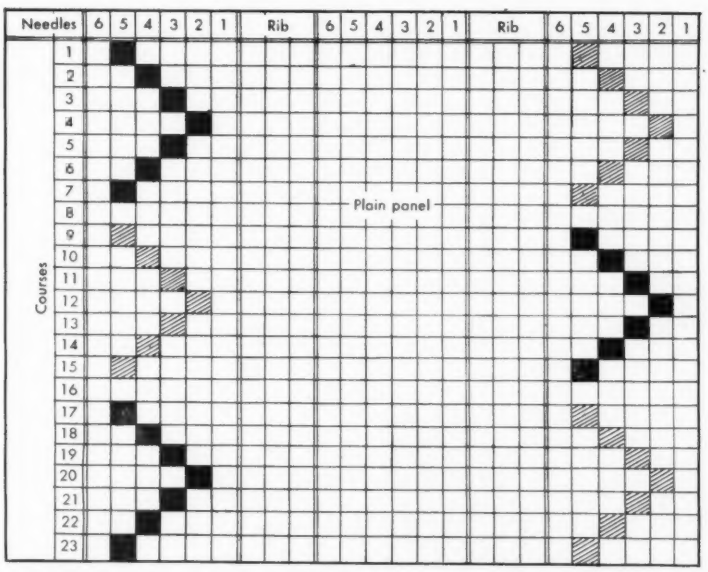
Where a clock is required, the complete length of the clock must be shown in the design. A number of



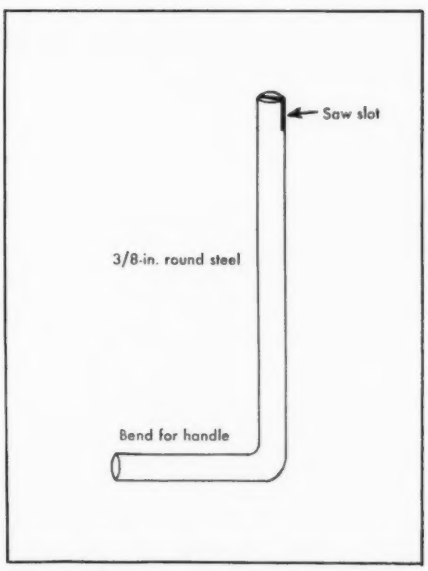
THE SELECTORS are arranged in three groups, and only two selectors from each group may be used. The dummy selectors are positioned over the rib needles and the unembroidered panels.



PEGS in the drums are inserted according to the design. Each peg in the upper drum shogs the cylinder to the right or left one needle space.



THE DESIGN is drawn out in color in alternate panels. This design repeats over 16 courses and requires a total of 18 wrap yarns.

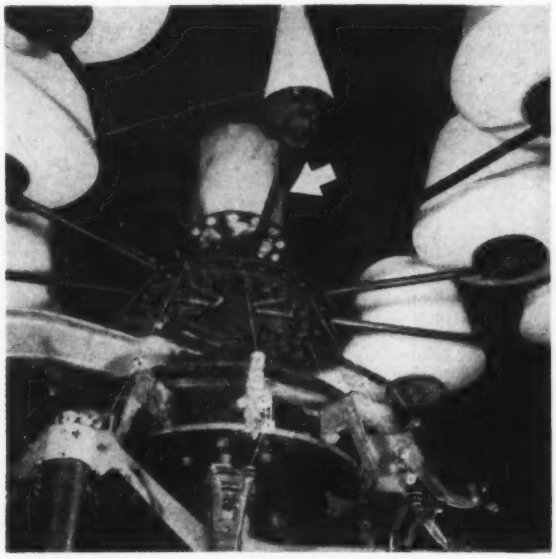


SPECIAL TOOL can be made from a piece of round steel to bend selectors.

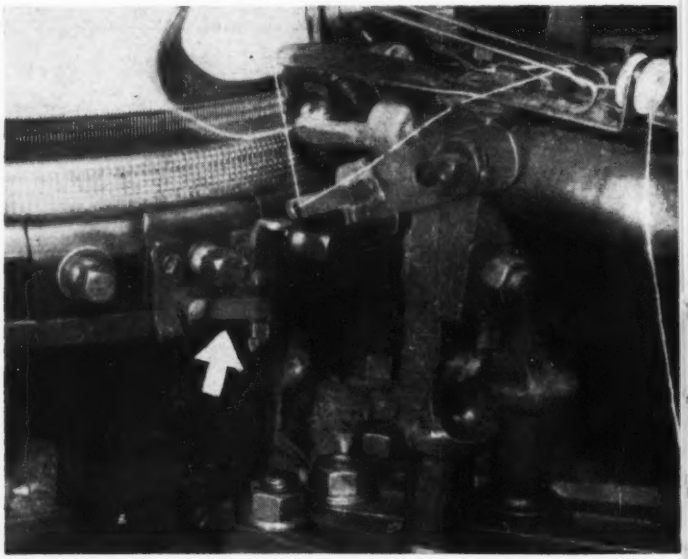
courses with no shogging and little patterning should be included in the design so that the length can easily be altered to center the design and place the fork at the correct heel position. A small blank space in the design can be used for this purpose.

Sixteen selectors are generally placed at each side of the cylinder. Working the pattern drum and the pattern chain out together simplifies setting up the machine. No. 30 links in the pattern chain cause the pattern drum to move forward once and idle once. On the other hand, No. 8 links will cause the pattern drum to remain idle.

If you change sizes after the main-chain rack link that takes the pattern out of action, the pattern chain will get out of time with the pattern drum.



TENSION DEVICE on bobbin pole (arrow) reduces drop stitches. Twin circular brushes keep cylinder slots above cam boxes clean.



STOP-MOTION GUIDE for backing yarn falls and strikes the movable lever to allow weighted arm (arrow) to drop and stop machine.

Circular-Knitting Ideas

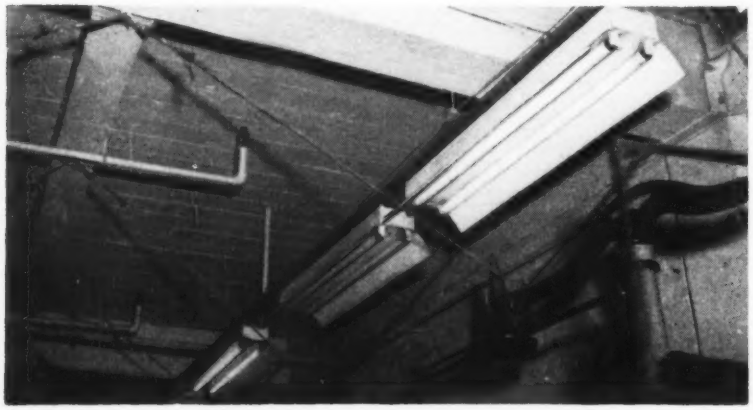
That Help Quality and Efficiency

On spring-needle machines use a—

- Backing-yarn stop motion
- Cable to support take-up
- Oil splash guards

On latch-needle machines use a—

- Canvas yarn-tension device
- Double cleaning brush
- Out-of-the-way needle box



CABLES between rafters and take-up arms keep the machines steady. Cones on top of take-up bearings keep grease in and lint out.

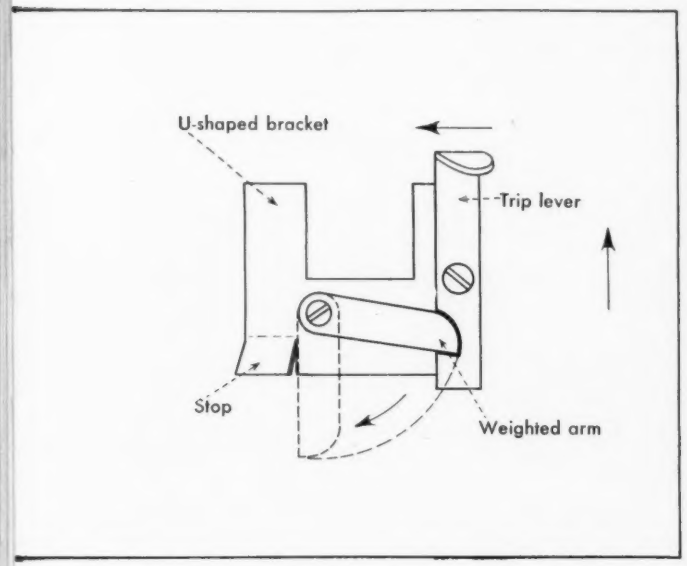
By JAMES H. BLORE
Assistant Editor, TEXTILE WORLD

IN COMBINATION WITH A triple fabric-inspection program [TW, March, '54, p. 104] Roanoke Mills, Roanoke, Va., uses a number of devices on its knitting machines to aid in the production of high-quality knitted underwear and outerwear fabrics. The devices are all mill made and are used on circular rib machines and loop-wheel machines.

Drop Stitches Reduced

A yarn-tension device, designed to retain the same tension on the yarn at all machine speeds, is fitted to each rib machine. The device reduces drop stitches, especially during the knitting of Swiss-rib fabrics.

The device is made by sewing canvas around a 6-in. wooden cylinder and drilling a hole through the center of the cylinder to allow the cylinder to slide on the bobbin pole. Two yarn rings retain the cylinder in position on the pole.



STOP-MOTION DETAILS show how the movement of the trip lever on the U-shaped bracket is moved to allow the arm to drop.

SPLASH GUARDS made from galvanized sheet stock are hung on pegs screwed to the table side and can be rapidly removed.

Yarn tension is increased by twisting the top ring to give the yarn a greater arc of contact on the canvas.

Cylinder Slots Kept Clean

Two circular brushes rotate one above the other on a wire fixed to the cylinder-shoe screw. The wire is bent to form a spindle, and the brushes are turned by the rotation of the cylinder. The twin brushes keep the important area above the cam boxes clean and free from lint.

A metal needle box fixed to each machine helps keep the knitting room tidy. The box is welded to a bracket, and the bracket is secured with a collar screw to the underside of the head ring.

When the box is not in use, it swings out of the way under the head ring. The head mechanic keeps the boxes replenished with needles and also keeps a record of excessive breakages.

Waste Reduced

A backing-yarn stop motion consists of trip levers that fall and contact the stopping mechanism when the backing yarn breaks or runs out. A slotted bracket with a movable yarn guide is fixed to the backing-burr bracket.

The slot in the bracket enables the yarn guide to be adjusted so that it will strike a lever on the cylinder when the yarn guide is in a low position. When the yarn is running normally to the needles, the guide is supported in a high position.

The cylinder lever is pivoted on a U-shaped bracket screwed to the cylinder. The lever has a notch cut in it to support a steel arm that swings on a collar screw in the cylinder bracket.

If the yarn guide loses its support, the cylinder lever is moved as the cylinder rotates. The heavy arm drops onto a projection on the U-shaped bracket that actuates the mechanical stop motion.

Although the knitter blows off lint, oils the burrs each shift, doffs fabric, fixes press-offs, replaces needles, and creels yarn, he is able to look after 40 feeds and still produce quality fabric.

Oil Stains Avoided

To reduce oil stains on the fabric and to keep lint out of the ball-bearing take-up gears, an empty yarn cone is placed on each take-up bracket to cover the bearings.

To prevent oil from splashing on the yarn from the drive shaft and bevel gears, galvanized sheets are hung on pegs screwed to the table sides. The covers are quickly removed to clean or fix any mechanism that is under the table.

A painted yarn rack 4 ins. off the floor is built around each table. A safety cover over the shaft between the tables is fixed to the yarn racks. A 3-hp., 720-rpm. motor drives two ta-

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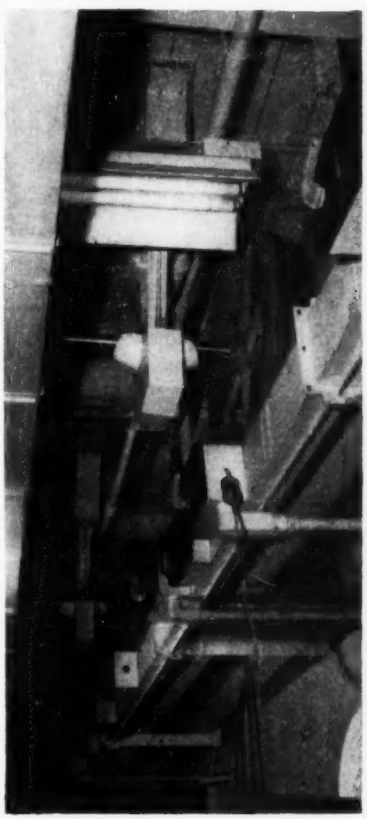


LINE-SHAFT DRIVES are supported on two girders in an out-of-the-way place behind the main heating duct.

DOPE-DYED YARNS, along with other filament-rayon yarns, are slashed on Cocker nine-can slashers. The pit shows just beyond where operator, O. R. Pearson, is standing.

Look to Cleanliness For Quality DOPE-DYED FABRICS

▶ Haynsworth Mill is weaving high-quality fabrics from dope-dyed yarns on conventional machines. But the men have gone all out for cleaning methods to eliminate the most common defect—soiled cloth—in the loom-finished fabrics. The most notable effort to obtain cloth free from soils is a new slasher room built with pits to completely wash down slashers with water and steam.

By **RICHARD B. PRESSLEY,** Associate Editor, TEXTILE WORLD

SUCCESSFUL WEAVING of dope-dyed fabrics has caused Haynsworth Mill, Anderson, S. C., to expand the building and number of machines three times recently. Haynsworth is now a division of Woodside Mills.

The first expansion at Haynsworth included the addition of XD Draper looms to the original order of XD looms. The most recent expansion included C&K S-6 4x1 looms.

Pits Underneath Slashers Are Developed for Cleaning

New Cocker slashers were included in the most recent expansion program. A notable feature in the slasher installation is concrete pits underneath each slasher to aid cleaning. All buildings at Haynsworth, including the new slasher room with pits, were constructed by Daniel Construction Co.

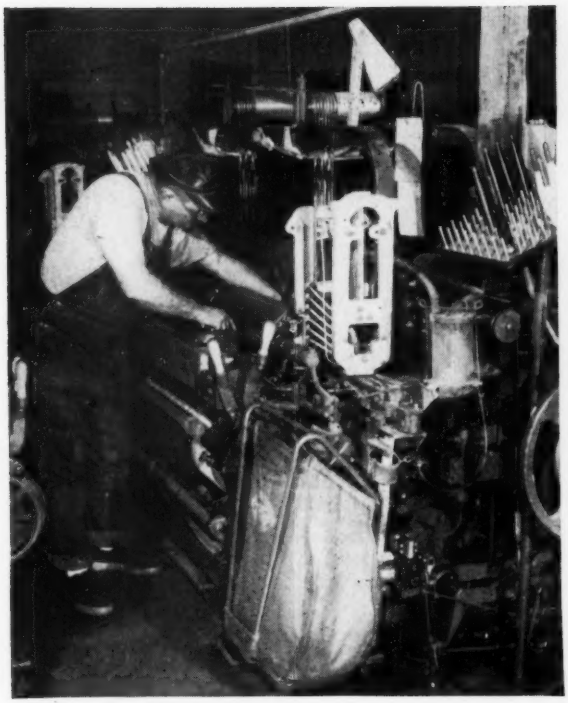
In every process, conventional machinery without modification is used. The entire plant is equipped with a Bahnson air-changing system.

At present, Haynsworth is running 50 colors in 49 different yarns (different deniers and yarns from different yarn manufacturers). All yarns used are continuous filament. Among those used are acetate, rayon, nylon, Orlon, and Dacron. Dope-dyed yarns form a large part of those used.

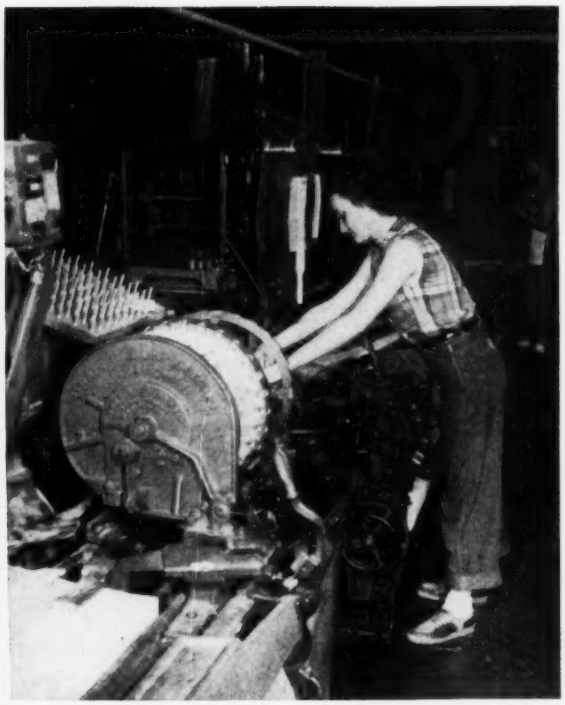
Five Abbott quillers with a total of 580 units wind all filling used on XD Draper looms. Here, colors, especially on dope-dyed yarns, are mixed from unit to unit. The only restriction placed on the yarns run at the quillers is that large variations in denier sizes are run on separate machines.

Universal winders (240 spindles) wind filling yarns on metal-ferrule bobbins for C&K S-6 looms.

Most dope-dyed warp yarns are received at Haynsworth on section



S-6 LOOMS are used to weave plaids from dope-dyed yarns. Four shuttles are available for four colors of filling. Weaver Barney Dewease changes the two bottom shuttles manually.



XD LOOMS equipped with dobbies weave patterns that simulate two-shuttle weaves from striped warps with only one color of filling. Frances Smalley, weaver, restarts a loom.

beams. Section beams are stored in special racks in the warper room until they are needed in the slasher room only a few yards away.

The pits underneath the new slasher room provide space for all piping, both for slasher operation and slasher controls. In addition, the pits provide access to the slashers for servicing and provide drain areas so that the slashers can be washed down without disturbing the main operating floor in the slasher room.

The bottom of each pit slopes from the front of the slasher back to a runway to connect all pits under the slasher creels.

Mixing valves are available in each pit to furnish water or steam of any temperature from lukewarm to live steam. Flexible hoses connect to the valves for cleaning the slashers. Waste water runs from the pits into a storm sewerage line.

Three nine-can Cocker slashers fit neatly over the pits. One other slasher of the same type will be placed in operation soon.

The slasher speed on dope-dyed yarns and most other continuous-filament yarns is 40 yds. per min.

The slashers are also used to beam nylon yarns without slashing them. Slasher speed for beaming is 100 yds. per min.

The Slasher-Room Floor Is Free From Obstructions

Taylor instruments are used for size-cooking, can-temperature, and variable-speed control.

Size is cooked in two kettles on the main slasher-room floor and pumped to four storage kettles on an elevated platform over the cooking kettles. The pump to convey the cooked size to the storage kettles is located in the pit and is completely out of the way.

Cooked size is furnished to individual slashers from separate storage kettles. Special valves are installed, however, so that size can be furnished to each slasher from all four storage kettles.

The instrument panel for size-cooking control is placed near the wall at

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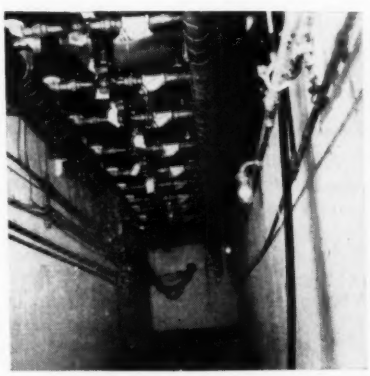
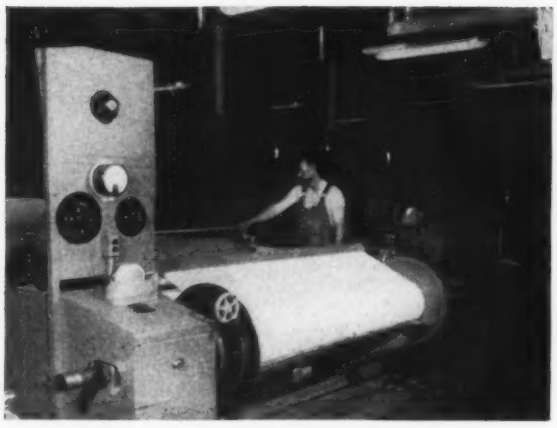
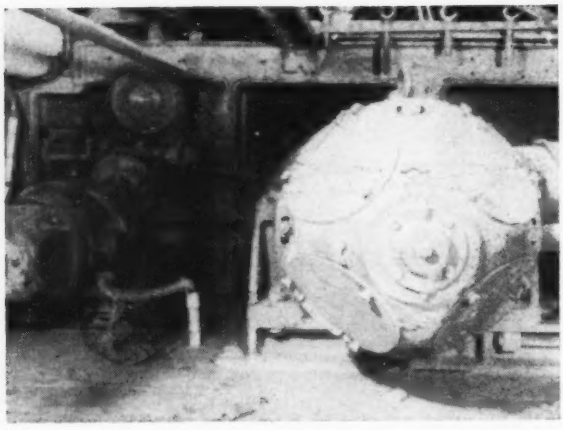


SLASHER CONTROL LINES, piping, and wiring are located in four pits underneath the slashers. The bottom of the pits is sloped to the back to drain off water used in cleaning the slasher.

DARK BACKGROUNDS are used on all grading frames to inspect and grade dope-dyed fabrics. Grader Mary Myers divides second-quality cloth equally between weavers on the three shifts.



SLASHER OPERATOR Ray Bush makes an average of only three manual adjustments per shift. When the master rheostat is connected to the automatic moisture control, no manual adjustments at all are made.



THE BIG GEAR MOTOR is a variable-speed motor that drives the loom beam with a chain. The small gear motor, which drives the delivery roll, and a similar gear motor for the squeeze rolls run at any speed set by the master rheostat.

New SLASHER DRIVE Eliminates Maintenance

▶A new-type slasher drive at Avondale Mills has been operating continuously in three-shift production for 11 months with only one minor mechanical adjustment. The drive features a remote control with a totally enclosed magnetic amplifier with no moving parts. The present condition of the drive indicates that it will run for several years without maintenance.

By **GEORGE VEIGL,** Engineering Dept., Avondale Mills

ONLY ONE ADJUSTMENT has been made to a new slasher drive with magnetic-amplifier control in the Bevelle Plant of Avondale Mills at Alexander City, Ala., in 11 months of continuous service. That adjustment was only a minor one.

The complete drive consists of three gear motors located underneath a four-cylinder cotton slasher, a panel for slasher-operator control at the front end of the slasher, and a totally enclosed packaged-type control system.

Advantages of the new drive, in addition to practically maintenance-free operation, are:

1. More yards of yarn on each loom beam
2. Positive control of yarn tension throughout the beam
3. Smooth creep speeds
4. Smooth action to reduce broken ends when the slasher is started or stopped
5. Wide-range adjustments of high and creep speeds for all variations of yarn numbers

Beams Contain 11% More Yarn

A recent survey was run to find the number of yards of yarn placed on loom beams with the new drive in comparison to the amount of yarn of the same style placed on beams with other drives on adjoining slashers. The new drive puts an average of 1,110 yds. on each of nine beams, and the old drives put on an average of only 933 yds. The average increase was over 11%.

The magnetic amplifier is so sensitive that it senses a slight increase in load on the beam motor with each extra wrap of yarn on the beam. It slows the beam motor down to decrease the load exactly by the amount increased by the extra wrap. By decreasing beam speed in exact proportion to the increase in beam diameter, the control holds uniform tension from empty to full beam.

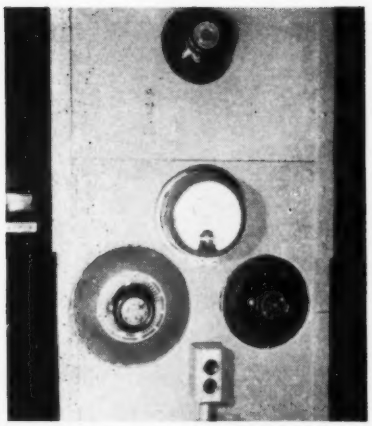
A gear motor with a chain drive is located underneath the size box to drive the squeeze rolls. A panel over the motor contains a rheostat for manually adjusting the yarn tension between the squeeze rolls and delivery roll. The tension can be regulated during slasher operation to compensate for yarn shrinkage or stretch.

Ordinarily no adjustments are made unless there is a great change in the yarn numbers run in the creel. Cotton yarns of 13s to 18s on 8 to 18 section beams are run at present without changing the rheostat setting. When a change has to be made, only a control knob has to be turned.

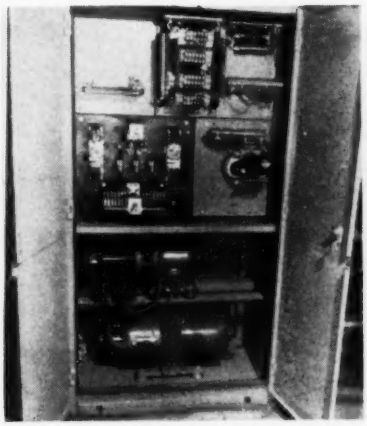
An ammeter is also located on the size-box control panel as a direct indication of the yarn tension. A 5-amp. indication is normal on the present styles.

Control Can Be Fully Automatic

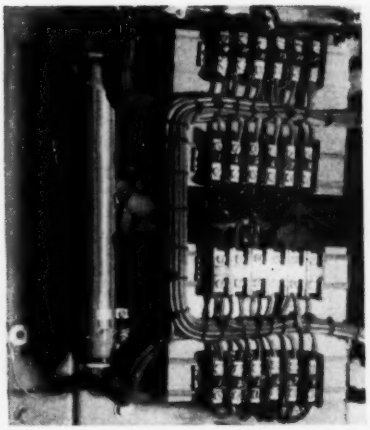
A second gear motor employs another chain drive to the delivery roll to pull the yarn from the cylinders. The third gear motor in the series of



THE MASTER RHEOSTAT, *top,* **is set manually to control slasher speed. The ammeter,** *center,* **indicates beam tension. Tension is set manually (only at style changes) by the control knob at the lower left. Creepspeed is changed from the other dial.**



MAGNETIC CONTROLS are mounted in a steel cabinet. The generator, *bottom,* **is driven with a built-in motor that receives power from the main line of the plant. Next above is the booster generator; above the booster is the magnetic amplifier.**



THE MAGNETIC AMPLIFIER has no tubes or moving parts. In effect, it is simply two transformers connected through a magnetic field to the beam motor to slow the beam motor down as the beam diameter builds up. There's nothing to wear.

three also employs a chain to drive the loom beam.

The speed of all three gear motors is controlled by a master rheostat set in a panel at the front of the slasher. At present, the master rheostat is regulated manually by the slasher operator. When the moisture-indicator reading shows too wet or too dry, the operator turns the knob on the rheostat to speed up or slow down the slasher.

When the drive was first applied to the slasher, the master rheostat was connected to an automatic moisture

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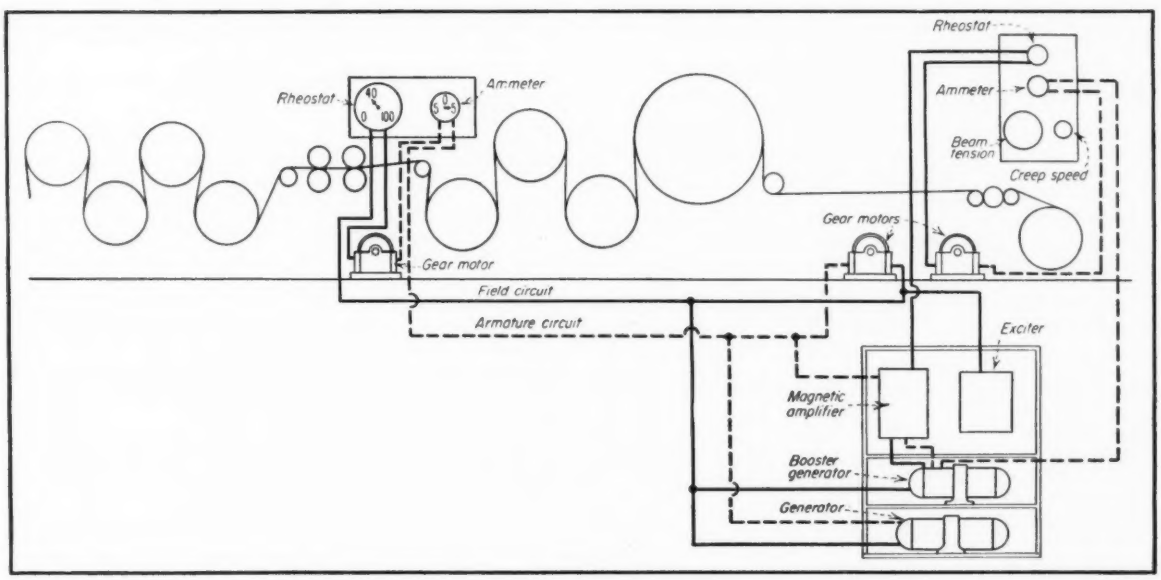
A New Advance in the Textile Industry

Magnetic amplifiers were practically unheard of in the textile industry until a year or so ago, at about the time engineers were excited over the use of electronic controls. Both types of controls have the advantage of accuracy in controlling drive current in very slight variations.

However, the nod seems to be in favor of magnetic amplifiers in many textile uses because of their maintenance-free operation. The slasher drive described here is one of the first major production installations in the industry.

The magnetic amplifier used on the slasher is simply two transformers connected through a magnetic field to the slasher-beam motor. As beam diameter builds up, the amplifier slows the motor down to maintain the same tension on the winding yarn.—EDITOR.



BEST PERFORMANCE is realized if the magnetic amplifier is placed close to the slasher drive. The unit at Avondale is located on the floor directly below the master rheostat at the slasher front. With this layout, only a small amount of wiring is used.

Answers on Finishing WOOL-SYNTHETICS BLENDS

Here are answers to some questions on the difference between finishing wool blends and all-wool fabrics:

- **Crabbing eliminates wool-nylon dye creases**
- **Raising may be aided by chemical means**
- **Shrinkproofing increases resistance to abrasion**

Q. Are wool blends burled in the same manner as all-wool fabrics?

A. Yes, except that more care is necessary. Wool-synthetics blends do not close up as well as all-wool fabrics, and improper burling may cause holes.

Q. Can the standard all-wool scouring reagents be used on wool blends?

A. Yes. However, alkali should be used with caution, for some synthetic fibers are sensitive to alkali.

Q. How about the scouring machinery?

A. In general, standard equipment is effective. Fabrics, though, that have a large viscose content should be treated on lightweight machines to prevent damage.

Q. Is the scouring shrinkage less in a wool blend than in an all-wool fabric?

A. Not necessarily. Some wool-viscose blends shrink even more than all-wool fabric.

Q. How about crabbing wool-synthetics blends?

A. Avoid excessive tension and alkali concentration. Keep the pH as close to 6 as possible.

Crabbing is useful in blends containing a high percentage of nylon; if not crabbed, these fabrics may develop undesirable, permanent creases when dyed on a beck.

Q. How does the nature of the blend affect fulling shrinkage?

A. Shrinkage is affected by the types of fibers present in the blend and by the coarseness of the fibers; as the denier of the viscose becomes greater, the shrinkage increases. Also, the system by which the yarns were manufactured affects the shrinkage; for example, the shrinkage is greater in a wool-viscose worsted than in a wool-viscose woolen.

However, unless the acetate, viscose, or nylon content exceeds 30%, the fabric will shrink like an all-wool cloth, except in heavily crabbed goods. The shrinkage, of course, is also affected by the conditions of the fulling operation.

Q. How is the fulling action influenced by the blend?

A. Fulling is reduced by the presence of nylon and acetate. Viscose, unless it is present in large amounts, has no effect on the nature of the wool.

The fulling action seems dependent upon the swelling of the fibers; acetate and nylon do not swell, whereas viscose does. Therefore, to improve the fulling action of a wool-acetate blend, the acetate should be swelled. The pH of the fulling moisture also affects the fulling action.

If the structure of the fabric is not designed for heavy fulling, such a treatment causes the wool fibers in the blend to pill and create a permanent change in the appearance of the dyed fabric.

Q. How can a wool-synthetics blend be made shrink resistant?

A. By the use of resins or by chlorination. Chlorination is more effective on blends than on all-wool fabrics. A shrink-resistant treatment also increases the resistance of the fabric to abrasion and pilling.

Q. Is it necessary to treat wool-synthetics blends for crease resistance?

A. It is not necessary unless the blend contains more than 30% viscose. Acetate or nylon, when present, generally eliminates the need for a crease-resistant finish, especially if the blend contains at least 50% wool.

Q. How do the synthetic fibers in the blend influence raising?

A. Fabrics containing acetate or viscose are difficult to raise well. In a wool-acetate blend, the raising operation brings both fibers to the surface of the fabric. However, the wool component can be raised if the fabric is treated with an agent that softens the acetate (phenol, formic acid). After the excess softening agent is washed out, the fabric can be raised as usual.

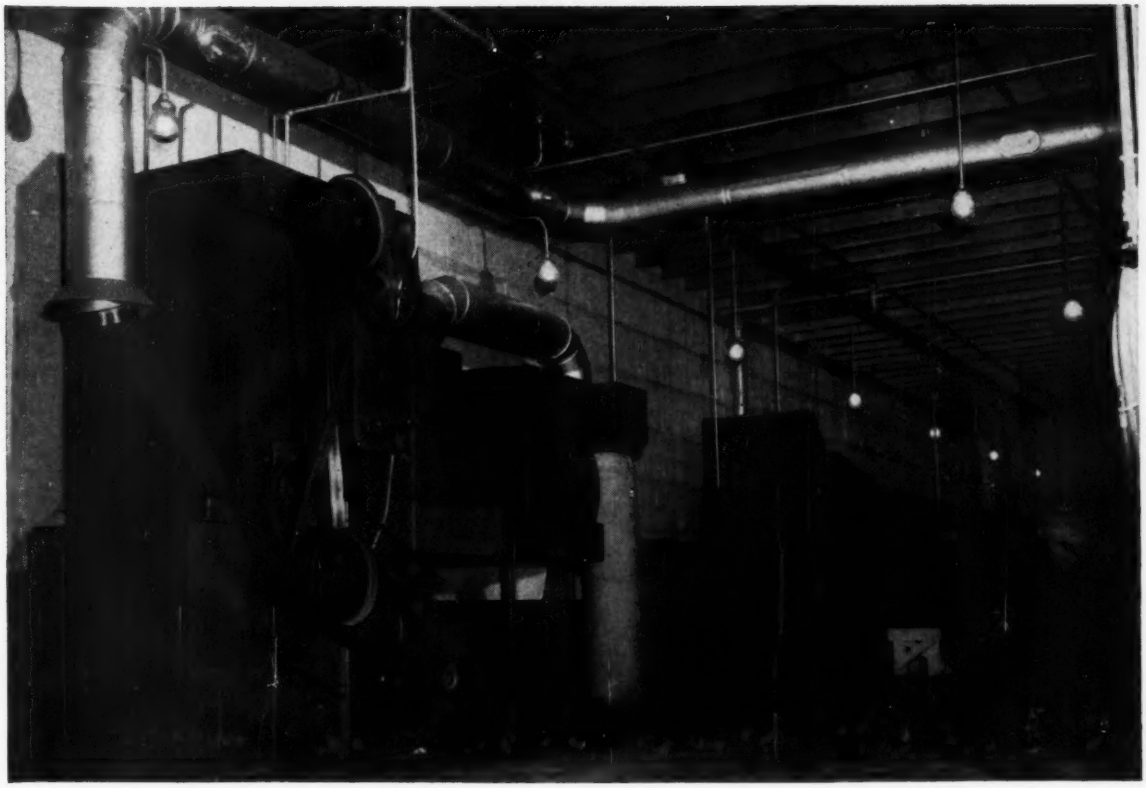
Raising is affected by the method used in dyeing the fabric. In union dyeing, especially, the neutral action of the process affects the wool component. For effective raising, as many treatments as possible should be carried out in acid media, and the fabric should be slightly acidified before raising.

Raising produces interesting effects on fabrics containing nylon waste or staple in the filling. When raised, such a fabric shrinks in width, becomes dense and heavy, and loses the cold hand associated with nylon.

Q. How is a fabric of a wool-synthetics blend pressed?

A. By standard methods after it has been brushed and steamed. After being pressed, the cloth should be stored in a cool place.

Based on a paper by C. S. Whewell at the International Congress for Unity in Textiles.



OPENING LINE: Centrif-Air air cleaners and a Saco-Lowell opener are fed from a controlled mix.

Modernization Pays Off In QUALITY YARNS

U. S. Rubber Co., Gastonia, N. C., has made these installations to get high efficiency and quality combed yarns—

- **Electronic lap-weight recorder**
- **Spinning change-overs**
- **A rigid quality-control system**

By JAMES H. BLORE, Assistant Editor, TEXTILE WORLD

A RECENT MODERNIZATION PROGRAM has enabled the Gastonia, N. C., plant of U. S. Rubber Co.'s Textile Division to improve the quality of its combed yarns. The mill's 18,760 spindles produce 8s to 50s combed knitting yarn.

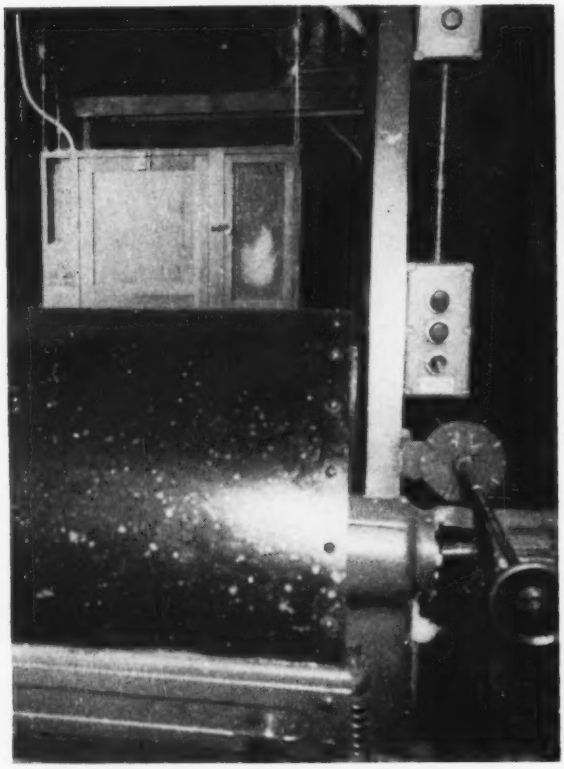
The mill uses Good Middling cotton. Classing for grade, staple length, and color are done by the company's cotton department. Each bale is tested for Micronaire fineness, and mixes are selected to maintain uniformity of fiber properties.

Open hoppers discharge onto a feed table to convey the cotton to Centrif-Air cleaners. Next in the opening line is a new Saco-Lowell No. 11 opener and a No. 12 condenser. From this point, the cotton moves by a pipe to a Lummus Gyrator and then to an automatic feed table to the picker hoppers.

Electronic Recorder Helps Regulate Lap Weights

An Aldrich regain indicator is hung in the center of the picker room over the three Kitson single-process pickers. The Aldrich indicator, picker-lap scales, and electronic weight recorder are coordinated so that the weight of the lap, compensated to moisture regain, is printed on the recorder.

A system of lights on each picker shows the operator whether the lap is light, heavy, or in tolerance. The operator adjusts the picker as indi-



REGAIN INDICATOR hung over the center picker is connected to an electronic recorder that controls the lights on the picker.

ELECTRONIC RECORDER shows lap-weight deviation caused by moisture changes. Red mark (arrow) indicates lap tolerance to ± ½ lb.

cated by the lights. Besides recording the total number of laps made, the recorder makes a record of the number of light or heavy laps.

The tolerance allowed on each lap is ±¼ lb. Each lap is weighed as it leaves the picker.

The relative humidity is kept at 50 to 55% in the card room. There are 115 cards that produce 5 to 7 lbs. of sliver per hour. In the Saco-Lowell system of comber-lap preparation following carding, the carded sliver is processed through a 9-in. lap winder, five-roll controlled-draft drawing, and a 10½-in. lap winder.

Combers Run at 106 Nips per Minute

The 16 new Model-52 Saco-Lowell combers run 106 nips per minute and produce 35 lbs. of sliver per hour.

The 48 deliveries each of breaker and finisher drawing are run by two men. Armstrong J-490 covering is used on the middle rolls of the Saco-Lowell three-over-four drawing frames. Coiler heads feed 14-in. cans.

Roving used in the coarser yarn is made on nine new F-S-3 roving frames and Saco-Lowell speeders.

The Whitin spinning frames have been equipped with Roberts high-draft cradles, casehardened-steel top front rolls, and No-Oil saddles. Plant Manager O. L. Ward likes this double-apron system because it gives good control of the fibers. Armstrong 729 cots are used on the front rolls and J-490 cots on the back rolls. Spindle speeds range from 7,900 to 9,600 rpm. All yarns are spun with a twist multiplier specified by the customers.

Relative humidity in the winding room is kept at 62½ to 65%. Yarn, with pigtail tie-ups, is wound on dye tubes or standard cones on Foster 102 winders.

The overhead cleaners cover 120 ft. per min., and one cleaner traverses five 100-spindle winders.

Although each cone of yarn is inspected by the winder operator and the operator's number appears inside the cone, each cone is rechecked for winding defects before being packed. The seriplane is used for appearance tests on every yarn number wound.

Daily Humidity Checks Made Throughout Plant

The quality-control department makes humidity checks throughout the plant every day with a sling psychrometer. Any deviation from normal is reported to the maintenance section for correction.

The laboratory, air conditioned by a Carrier unit, houses a regain oven, balance, reels, Uster evenness tester, seriplane, yarn-inspection drum, and skein-breaking machine.

Roving from each frame and drawing from each delivery are checked daily for size. Card, comber, and drawing sliver from every delivery is checked monthly for evenness.

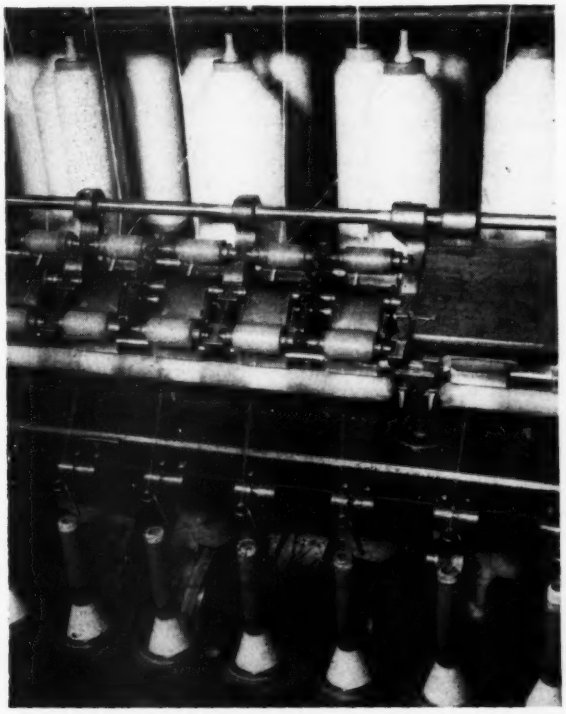
Bobbins of each yarn are checked daily for regain, strength, and size.

Two Parks-Cramer air-conditioning units equipped with Trion electrostatic filters supply filtered washed air. When the plant is closed on Sundays, the electrostatic filters are washed down with hot-water spray to remove the accumulation of dust and soot.

An automatically controlled shutter helps maintain the proper level of relative humidity and comfortable working conditions in hot weather. The air is drawn through the filters and washer by a fan driven from a 60-hp. motor to deliver 75,000 cu. ft. per min. of clean air at 80° F. and 65% r.h. to the spinning and winding rooms.

SLIVER LAP is made from 20 drawing slivers. A drawing operation follows the first lap winders.

NEW 12-HEAD COMBERS operate at 106 nips per minute. Noil is collected by a vacuum pipe.



SPINNING FRAMES have been brought up to date with Roberts high-draft cradles. The double apron gives good fiber control.

ROLL PICKING is done by Martha Farmer. A Parks-Cramer traveling cleaner goes over each frame every 4 mins.

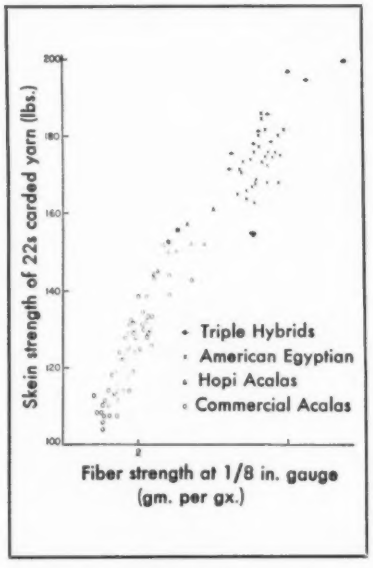
Neps, Fiber Strength Accented At Cotton Research Clinic

This second section of the fifth annual Cotton Research Clinic, sponsored by the National Cotton Council, digests papers on—

- **Neps—two new instruments to predict them**
- **Fiber strength—effect of gauge length, effect on processing and yarn**
- **Ply twist**
- **Tar spots—how to remove them from fabrics**

The first section of this clinic was reported in the April issue of TEXTILE WORLD.

Measure Fiber Strength at 1/8 In. For Better Correlation



STRAIGHT-LINE RELATIONSHIP exists between strength of 22s carded yarn and bundle strength measured at ⅛-in. gauge length. The relationship, which gives a correlation of 0.92, is good for a wide range of cottons and accounts for 84% of the variability in skein strength.

▶ No matter what is being measured at ⅛-in. gauge lengths, the measurement gives much better correlation with yarn strength; and that is the important factor.

By THOMAS KERR
U. S. Dept. of Agriculture

WE ARE READY TO RETIRE the Pressley Breaker in our breeding program and concentrate on fiber-strength measurements at the finite gauge lengths possible with the Clemson Flat-Bundle Tester and the Stelometer.

Large-scale tests show that the correlation between fiber strength and yarn strength is much better when fiber strength is measured at ⅛-in. gauge length. For 148 cottons spun into 22s carded yarn, the correlation coefficient between skein strength and fiber tenacity at ⅛-in. gauge length was 0.81; the correlation between 22s and the Pressley index for the same cottons was 0.54. In both these cases, fiber strength was determined from ginned lint.

When fiber strength was determined from second drawing sliver, correlation between skein strength and fiber tenacity was 0.83 for the ⅛-in. gauge length. If the results on ginned lint and drawing sliver are averaged, the correlation jumps to 0.92. It is therefore possible to account for 84% of the variability in skein strength with this one fiber measurement: fiber strength at ⅛-in. gauge length.

A similar test on 36s combed yarns showed an average correlation of 0.93.

To those working in this field for a number of years, the simple correlation between bundle strength at ⅛-in. gauge length and yarn strength is extremely impressive. With this simple correlation it is possible to account for as much of the variability in skein strength as was possible with the involved multiple correlations used previously. And it is not necessary to stratify the data in obtaining the simple correlation.

Granted, something new is being measured. But if bundle strength explains so much, what are the contributions of length and fineness to skein strength?

The relationship between upper-half-mean length and yarn strength is quite high but is extremely variable and varies with the season and the genetic stock used.

We don't know how much length is correlated with the rate of strength loss with increased gauge length. We do know, however, that length alone is not responsible for the strength loss because Upland long staples compare with Upland short-staple cottons more than with American-Egyptians.

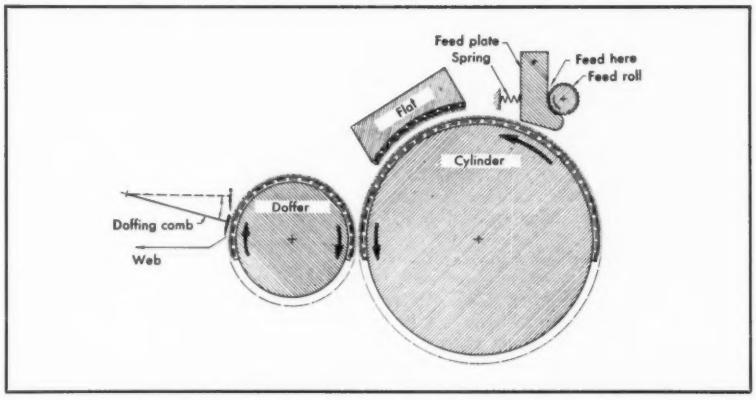
In a new variety to be released this year, Pima S-1, yield is increased, UHM length and Pressley index are decreased, but strength at ⅛-in. gauge length is maintained, as is yarn strength. In other words, uniformity along the length of the fiber has been increased.

Determining fiber strength at ⅛-in. gauge length opens up a new approach in breeding for fiber strength.

Attachment for Fiber Blender Aims at Nep Measurement

► Bats from the mechanical fiber blender are processed on a miniature card, and neps in the web are counted. Results are reproducible and better than full-scale card tests.

By JOSEPH T. ROUSE,
Cotton Technologist, USDA



MINIATURE CARD has a single flat but no lickerin or grid bars. Speeds are equivalent to 40-gr. sliver at 9½ lbs. per hr. Web is mounted on velvet board for nep counting.

ACCESSORY EQUIPMENT for the USDA mechanical fiber blender can make a good estimation of neps from a three-gram sample of cotton. Two operators can make four tests an hour with the equipment.

Equipment Resembles Card

The accessory equipment resembles a small card but does not have the cleaning action of the lickerin or the grid bars. Speeds are equivalent to producing a 40-grain sliver on a standard card at 9½ lbs. per hr.

The feed mechanism is similar to that used on the blender itself and consists of a feed apron, feed plate, and fluted feed roll that turns at 5 rpm.

The main cylinder turns at 290 rpm. to provide a surface-speed ratio of 1 to 410 between feed roll and cylinder.

The flat is a 2-in. block of wood with the lower side rounded out and covered with card clothing.

The doffer is also covered with card clothing and has a 4¾-in. dia. This doffer turns at 83 rpm. to provide a surface-speed ratio of 6.5 to 1 between cylinder and doffer.

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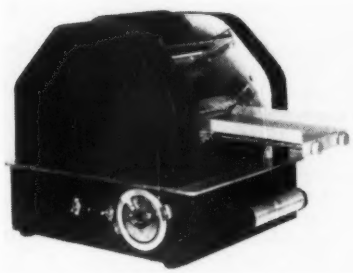

THE NEPOTOMETER consists of three metallic-wire cylinders and a feeding arrangement. Timer controls working time, usually 4 mins. Reversing switch is for stripping.

The Nepotometer Measuring Nepping Potential

► Hand-carded samples from the bale are processed to accentuate nepping qualities, and visual comparison with standards eliminates counting.

By J. F. BOGDAN, School of Textiles, N. C. State College

THE NEPOTOMETER CONSISTS OF a feeding arrangement, three rolls covered with metallic card clothing, a presser plate, a preset timer, a means of transferring a sample of the web for inspection, and the necessary means of actuation.

In operation, a 25-gr. sample taken from several places in the bale is hand carded into a 5x5-in. pad. The sample is placed on the feed table and tucked under the feed roll with a plate.

The instrument is then turned on with the timer set for 4 mins.

The fringe of cotton is torn away from the feed roll by Cylinder A, which has a relatively high surface speed. Cylinders *B* and *C* rotate at the same surface speed, which is lower than *A*. As the fibers on *A* pass *B*, some are transferred to *B* in a carding action. Other fibers remain on *A*. The transferred fibers are removed by *C* in a stripping action and then from C to A in another stripping action. The feeding cycle is now complete.

After feeding has been completed, the fibers are worked from *C* to *A* to *B* and then back to C. The pressure plate retards the easy transfer of fibers from *C* and prevents plucking.

To remove the sample, the pressure plate is taken out and a 6x10-in. piece of velveteen-covered cardboard is wrapped around *C*. The board is swung forward, and the sample sticks to the velveteen.

In stripping, excess fibers are removed from *A* by rotating *A* by hand in the reverse direction while a hand stripper is held in contact with it. The machine is then reversed, and *B* strips all the fibers from the underside of *C*. *A*, because of its higher surface speed, brushes fibers from *B* and impales them on C, from which they are removed by a hand stripper. (*A*

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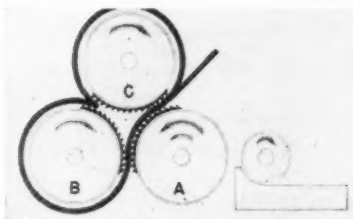


WORKING CYCLE is repetitive, as fibers are passed from *B* to *C* and back again. Fibers are on *A*'s entire circumference only during the feeding cycle.

How Fiber Strength Affects Processing and Yarns

► Fiber strength has negligible effect on processing through spinning; no effect on twist for maximum yarn strength; no effect on uniformity of sliver, roving, single yarn; no effect on yarn elongation.

By LOUIS A. FIORI, JOHN J. BROWN, and JACK E. SANDS
Southern Regional Research Laboratory*

In a continuing program to evaluate the effect of fiber properties on yarn properties, work has now been completed on the effect of fiber strength on yarn strength and processing characteristics.

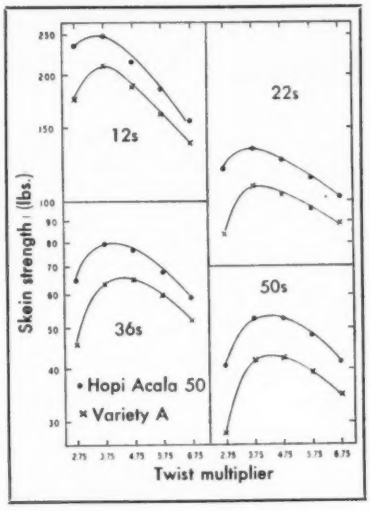
Two cottons with fiber strengths of 96,000 and 80,000 psi. but with other important fiber properties approximately equal were processed alike on conventional equipment and spun into 12s, 22s, 36s, and 50s yarn with twist multipliers from 2.75 to 6.75. Here are the results.

Processing behavior at opening, picking, and carding was not affected by fiber strength. Length, fineness, and maturity together are the principal contributors to cleaning efficiency and nep formation.

Interfiber friction is the principal determinant of roving twist, and length and fineness are the main influences on frictional characteristics.

No data are available on ends down in spinning because the test was too small to give a significant measure. The effect of fiber strength on drafting qualities was measured on the Belger roving tester.

Uniformity of sliver, roving, and yarn was not affected by fiber strength. Yarn appearance was not significantly different either, but finer yarns from the high-strength cotton were of slightly better grade than yarns from the weaker cotton.



YARN STRENGTH. Both single-strand and skein strength was higher for the stronger cotton at all twist multipliers. Fiber strength did not significantly change the twist multiplier at which maximum strength was achieved. At low twist multipliers, the difference in yarn strength is about 37%; but at higher twist multipliers, the difference is only about 16%. Elongation was not affected by fiber strength.

* One of the laboratories of the Southern Utilization Research Branch, Agricultural Research Service, USDA.

Nomograph Is As Accurate As Spinning Tests

► Spinning tests aren't worth the money if you're looking for yarn strength alone. A nomograph based on strength, fineness, and UHM predicts 94% of yarn-strength variation.

By WERNER BUESSER

How accurate are your spinning tests? Are you getting your money's worth?

Duplicate spinning tests can err as much as 5%; so a 22s yarn must vary more than 9.4 lbs. in skein strength before we are sure the difference is significant.

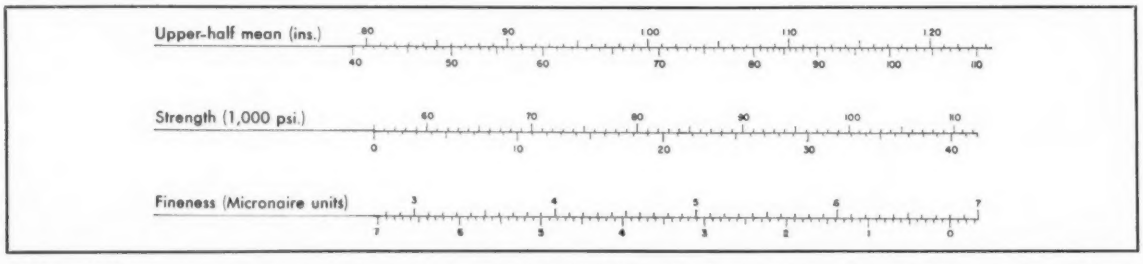
You can get the same accuracy (95%) by using five fiber properties—length, length uniformity, strength, fineness, and maturity—to predict yarn strength.

But you lose only 1% accuracy if you concentrate on just length, strength, and fineness. These three properties, when properly related, can explain 94% of the variation in yarn strength.

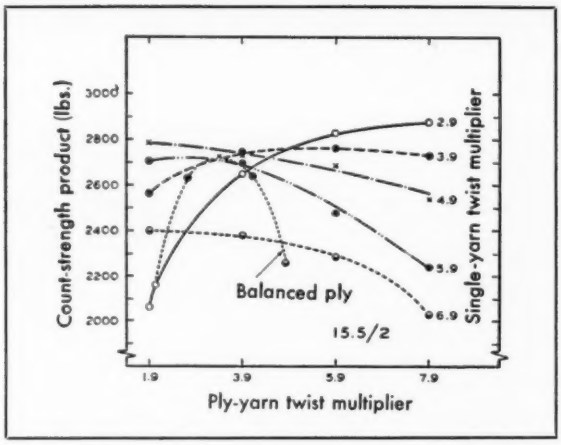
The formula, which was developed by the Cotton Research Committee, Austin, Texas, and reported in Textile World, October, 1953, p. 103, is:

Upper-half means (ins.) × 123.78
+ Fiber strength (in 1,000 psi.) × 0.73
− Fineness (Micronaire units) × 1.73
− 82.27, a constant
= estimated skein strength.

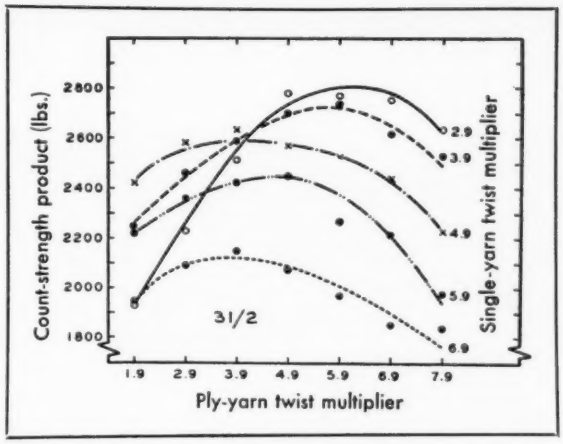
The nomograph that I have worked out makes the mathematics much simpler .



NOMOGRAPH is based on formula previously reported in TEXTILE WORLD but simplifies the figuring. Opposite UHM, read the number and jot it down. Do the same for strength and fineness. Then just add the three figures to get estimated strength of your 22s yarn. Example: For UHM of 1.11, read 83.0. For strength of 87,000 psi., read 23.4. For fineness of 4.0, read 4.8. Add the three new figures, and you have an estimated skein strength of 111.2 lbs.



15.5/2 YARN has highest break factor when single-yarn twist multiplier is 2.9 and ply-yarn multiplier is 7.9.



31/2 YARN has highest break factor when single-yarn twist multiplier is 2.9 and ply-yarn multiplier is about 5.9.

How Single and Ply Twists Affect Plied Yarns

► For 31/2 and 15.5/2 carded cotton yarns, maximum strength is obtained when low-twist single yarns are plied with high twist multipliers.

By LOUIS A. FIORI, JOHN J. BROWN, and JACK E. SANDS
Southern Regional Research Laboratory

IN PLYING COTTON YARNS, you can't get maximum strength, maximum elongation, and maximum aesthetic properties all at the same time. These properties must be compromised.

Since balanced plies are generally required, spinners can't obtain maximum strength because balanced constructions retain Z-twist in the single yarns. Maximum ply strength is obtained only after the single-yarn twist has been reduced to zero or even reversed.

For most constructions, however, both single and ply twist can be varied within reasonable limits without materially affecting ply-yarn strength or elongation. Here are some results of our tests.

Increases in ply twist generally produced increases in ply elongation, regardless of the amount of twist in the single yarns.

The ratio of ply to single-yarn strength, based on maximum ply-yarn strength, was highest when single-yarn strength was lowest (low twist), decreased rapidly as the single-yarn strength approached maximum, became approximately constant in twist combinations resulting in single yarns of maximum strength, and increased slightly as single-yarn strength decreased (very high twist).

Although the ply twist-strength-elongation relationships were found to be somewhat similar for the 31/2 and 15.5/2 yarns, some differences were noted. A change to a coarser yarn number caused differences in the twist level required for maximum strength and in the characteristics of the maximum-strength plateaus. The elongation values for the coarser yarn

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How To Remove Tar Spots From Cotton Fabrics

► After finishing, tar spots can be removed by various spotting techniques, but this method is expensive

► In finishing, a pressure kier or quench box can be used to effectively get rid of tar spots

By JACK COMPTON and LEO R. HUBBARD, Institute of Textile Technology

THERE ARE TWO APPROACHES to the elimination of tar spots from cotton fabrics: (1) remove the source and (2) remove the spots from the fabric.

Work to eliminate the contaminating sources of tar spots has not been successful; so economical procedures to remove tar spots from fabrics are now being announced.

Spotting Costs Money

Spotting is more expensive than removal in finishing, but excessive losses in fabric grading can be avoided by spotting.

There are three spotting techniques applicable to this work:

1. Steam application of a tar solvent followed by steaming.
2. Water application of a tar solvent followed by water.
3. Dry-solvent application of a tar solvent followed by a second miscible organic solvent.

Within steam spotting, there are three types: single, double, and triple.

Single steam separators usually deliver wet steam suitable for this work, but the steam gets dry and less effective on hot days or after extended use.

Double steam separators have a double-elevation pedal control that gives semidry steam or steam and water. Special needle valves regulate the relative volumes of water and steam.

Triple steam separators are the same as the double ones except for an additional

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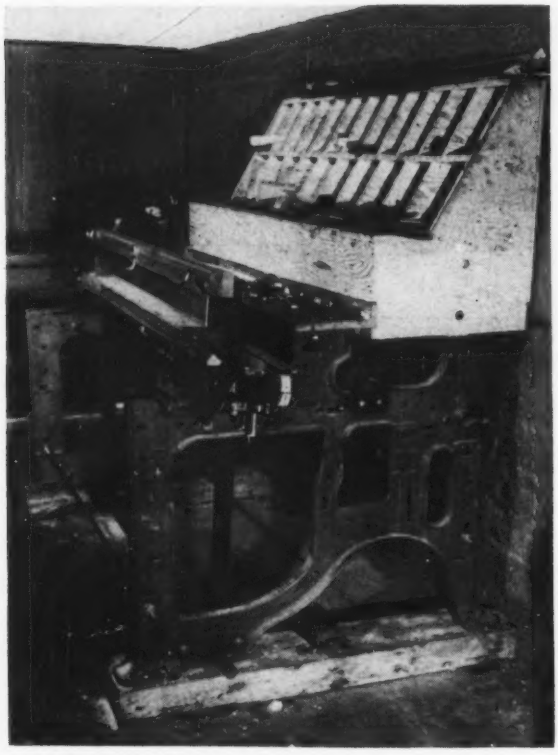
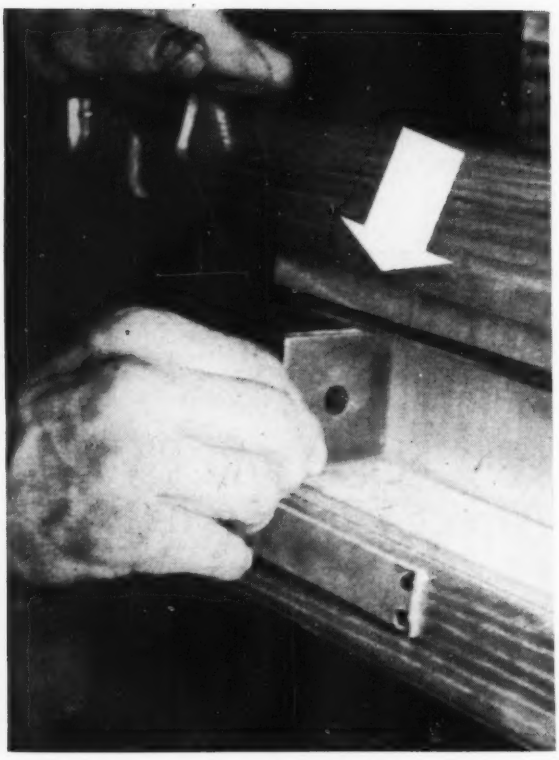
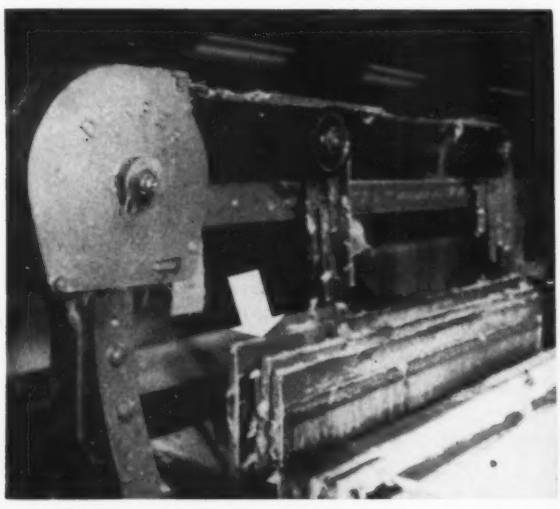
What One Mill Is Doing To



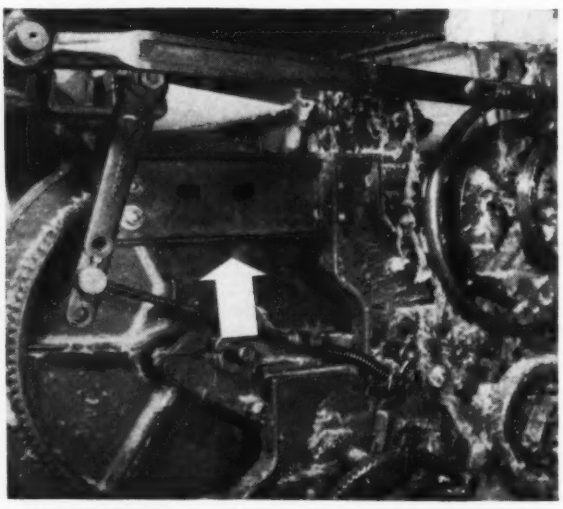
ACCURATE LAY ALIGNMENT results when lays are aligned out of the loom on this jig that simulates loom conditions. At least one lay for each loom model is kept as an extra for quick replacement.



THIS LAY has been aligned with straightedges and a reed square. Lay swords and protector motion are rebuilt. The complete lay will be dropped into a production loom, and the loom will be quickly started.



OLD HARNESSES used on roll-and-shaft harness motions are still used when clock-spring top harness motions are added. The heavy, two-row heddles are sturdy and vibrate less than lighter harnesses.



LONGER BRACKETS for whiproll-shaft bearings move the whiproll back even with the radius of the yarn beam head to give better-running warps. The cam-follower hub is longer too.

KEEP LOOMS MODERN

▶ Keeping looms in good mechanical condition, not increasing speeds, is helping this mill get 97% efficiency at 2 to 3% seconds on 1,300 print-cloth looms

▶ Lay alignment is a key part of the program, which also includes spring-type crank arms, extra cross girders and rocker-shaft bearings, and clock-spring top motions

By RICHARD B. PRESSLEY
Associate Editor, TEXTILE WORLD

A SOUTH CAROLINA MILL with more than 1,300 looms is doing a lot of work to keep looms modern. The work is for only one reason: better loom performance. Loom-speed increases have not been considered, but looms are run at average speed. Results from loom improvements are higher weave-room production and better-quality cloth with less physical effort.

Lays Are Aligned

One of the first steps toward first-class condition of looms is lay alignment. A continuous program has been set up to keep lays aligned.

Second hands and loomfixers watch their looms closely for indications of bad lay alignment. Washboard shuttles and rapidly wearing shuttles are the best indications of misalignment. When a loom is marking the shuttles, the lay is checked with straightedges. Looms not easily corrected are reported by the second hands to lay-aligning men.

The men who align lays don't do other types of work; their whole job is aligning lays. Lays are aligned in a lay-aligning room rather than in the weave room.

Extra lays are kept aligned for the three types of looms: E, X, and X-2. When a loom in the weave room has a bad lay, the complete old lay from the rocker shaft up is lifted out of the loom and a rebuilt lay is installed.

The lay-aligning room is near the general supply room so that supplies can be quickly picked up when they are needed. The room is equipped with a workbench for assembling small parts. Equipment for squaring shuttles is also located on the workbench.

Jig Is Used To Align Lays

A jig for aligning lays is made from two loomsides and other loom parts.

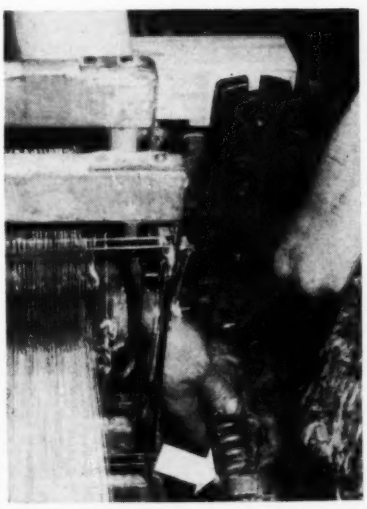
The feet of the loomsides are fastened with lag screws to two wood girders set on a concrete floor. Three lengthwise tie rods hold the loomsides together to form the over-all length of a loom. A rocker shaft and rocker-shaft boxes are placed in the loom and leveled. A crankshaft, crankshaft boxes, and crank arms complete the setup. For aligning purposes, the effect is the same as that of a loom.

A board is placed on top of the loomside surfaces that ordinarily support the arch ends, and this board is used to hold straightedges and other tools.

A plywood storage cabinet is placed on the back top of the loomsides to hold screws, bolts, and other small lay parts used frequently.

When a lay is removed from a loom, the lay-sword feet are set on the rocker shaft in the jig. Then the lay is completely disassembled. The lay swords are checked for wear. New ones are used, if needed.

All lays (the lay wood itself) are repaired in the mill machine shop before they are reused. A jig is set up to be fastened to a shaper. The lays are placed in the jig, and the groove is recut a little deeper so that the reed fits snugly in the groove.



SPRING-TYPE CRANK ARMS are being added to all looms as part of the loom-modernization program. Softer bang-offs result after the new crank arms are added, and parts breakage is reduced.

Just Set in a Rebuilt Lay

All worn lay parts are replaced while the complete lay is being rebuilt from the rocker shaft up. New shuttle races are put on all lays as they are rebuilt. Usually, new lay ends are used too. The protector motion is also rebuilt.

When the lay is reassembled, the crank-arm pins are put in to hold the lay in place, and the lay is aligned.

The steps used to align the lay on X-model looms are:

1. Square the lay.
2. Put on the lay ends, and align them to the lay.
3. Square the lay swords at the handrail surfaces.
4. Put in a reed, and add the handrail.
5. Square the reed to the lay.
6. Put on the back box plates, and square and align them. Put on the extensions.
7. Put on the checkstrap holders.
8. Put on the binders and front box plates, and set them to the shuttle.
9. Add the rebuilt protector motion.

When the lay is completely reassembled, the crank-arm pins and lay-sword foot caps are removed; and the complete lay is lifted out of the jig.

When the lay is needed in a loom in production, lay swords are set on the rocker shaft of the loom, foot caps tightened, crank-arm pins replaced and crank arms reset, temples set to the lay, protector motion set, battery reset, and checkstraps set to box the shuttle. The loom is then ready to run.

In addition to the continuous lay-aligning program, several other jobs

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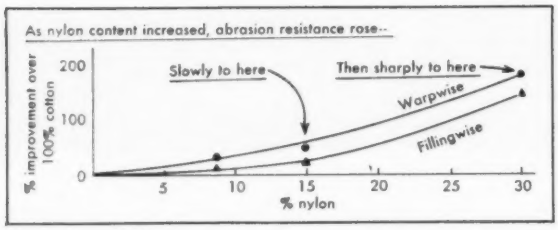
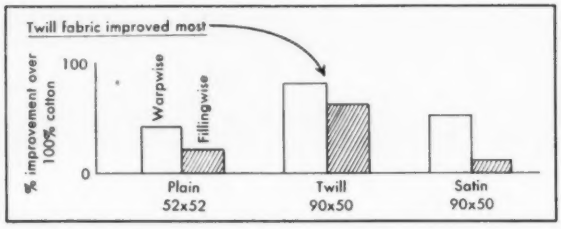
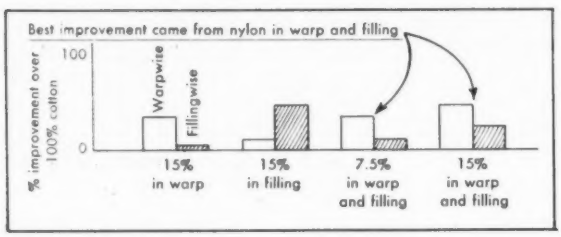


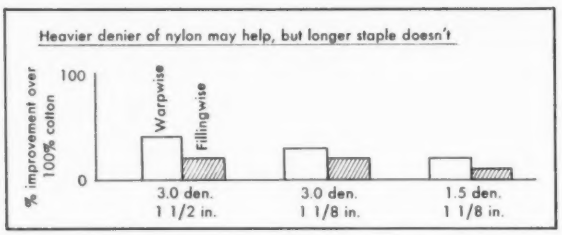
ABRASION RESISTANCE (Stoll wet-flex abrasion test) improved steadily with the addition of nylon in both warp and filling yarns. The fabric tested was a 52x52 cloth woven plain with 20s equivalent cotton yarns, with 3.0-den., 1½-in. nylon blended up to 30%.



FABRIC CONSTRUCTION plays a large part in determining how much improvement in abrasion comes from a given percentage of nylon. The three fabrics tested here all had 15% of 3-den., 1⅛-in. nylon blended with cotton in a 20s equivalent cotton yarn number.



WARP OR FILLING abrasion improves in proportion to the amount of nylon used, but improvement is not transferred from one to the other. As shown here in a 52x52 plain-woven cloth, improvement came with (1) warp or filling placement of the nylon and (2) the amount of nylon used.



SIZE AND LENGTH of nylon used makes little difference. Increasing length from 1⅛-in. to 1½-in. improved warpwise abrasion slightly, but fillingwise abrasion remained the same. Increasing from 1.5 den. to 3.0 den. slightly improved both. Processing and fabric-properties considerations will probably outweigh these improvements.

How Cotton-Nylon Blends Improve ABRASION RESISTANCE

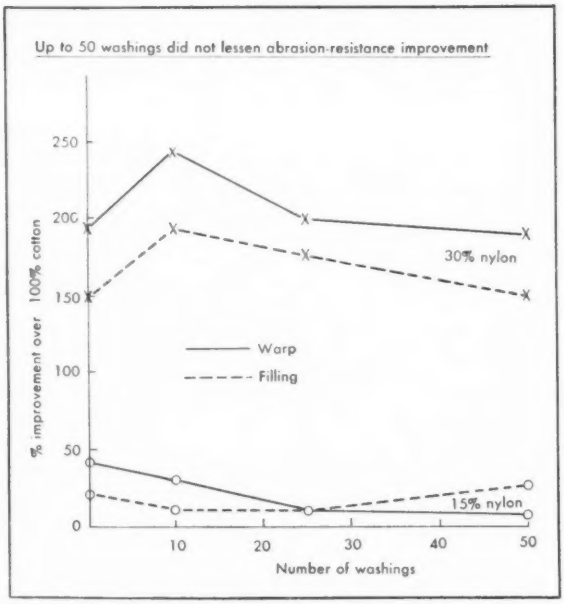
► Nylon blended with cotton improves fabric abrasion resistance 100% at about a 26% content of nylon. While fabric construction and placement of nylon are important factors, size and length of the nylon fiber are relatively unimportant.

By A. DESCHEEMAEKER
Textile Fibers Dept., E. I. du Pont de Nemours & Co., Inc.

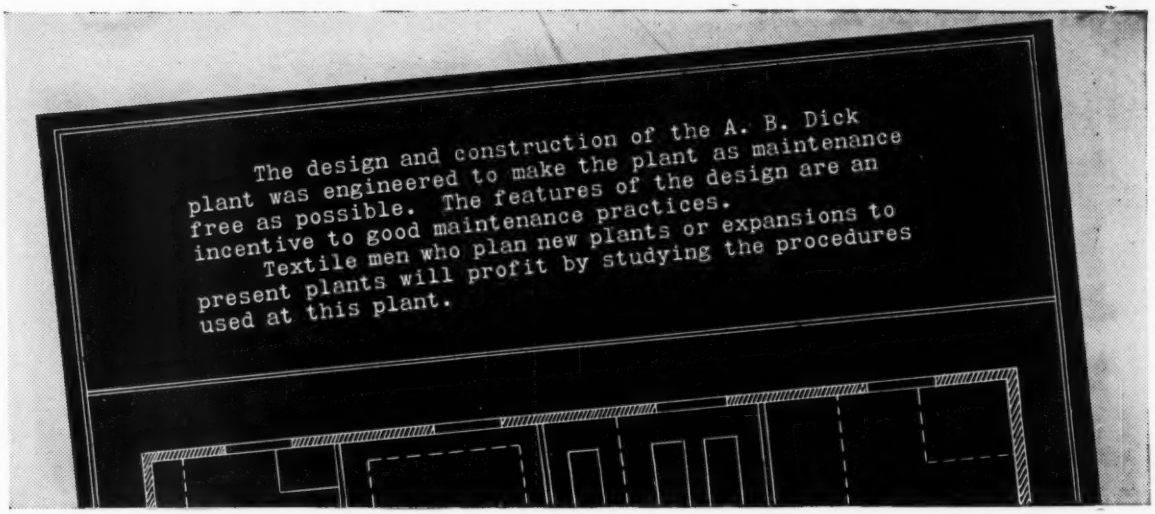
A LOW PERCENT (up to 30%) of nylon blended with cotton improves abrasion resistance over an all-cotton fabric, as measured by Stoll tests. Improvement is fairly steady until the nylon content reaches about 15%; then it rises sharply to almost 200% when 30% of nylon is used.

Results of basic laboratory studies are shown in the accompanying charts, which give the effects of (1) amount of nylon used, (2) fabric construction, (3) warp and filling placement of the nylon, (4) denier and staple length, and (5) washing and ironing.

One apparent paradox in the field of cotton-nylon blends is the effects of the nylon on yarn and fabric strength. In spite of nylon fiber being stronger than cotton fiber, a cotton-nylon blended yarn has 10 to 20% less strength than an all-cotton yarn. However, only 5% of this loss in yarn strength carried over into fabric strength in the plain-woven fabric used in the tests reported on here.



ABRASION-RESISTANCE IMPROVEMENT held almost constant through 50 washings and ironings in the 52x52 plain fabrics for both the 15%- and 30%-nylon blends. Shrinkage was about the same in the cotton-nylon and all-cotton fabrics. Ironing at 430 to 500° F. caused some fusing of the nylon.


The design and construction of the A. B. Dick
plant was engineered to make the plant as maintenance
free as possible. The features of the design are an
incentive to good maintenance practices.
Textile men who plan new plants or expansions to
present plants will profit by studying the procedures
used at this plant.

How Building Design Ties In With GOOD MAINTENANCE

Buildings designed right ease the strain on maintenance men; and good maintenance practices that follow pay off by —

- **Properly maintaining the original investment**
- **Eliminating downtime in production**
- **Reducing over-all replacement costs**

WE ARE FIRM BELIEVERS in both preventive and planned maintenance at our plant. Planning is done by several members of the supervisory staff who are in charge of the various types of maintenance work.

Our maintenance department does not attempt to handle construction projects but confines its activities to maintenance work, installation of production equipment, and equipment alterations. Outside contractors are brought in for building changes, machinery foundations, and other similar major installations.

Two Specialists Control Work

Two men, the master mechanic and building superintendent, have charge of all maintenance work and report to the director of manufacturing. The size of the plant requires the full-time attention of the master mechanic on production problems. The building superintendent gives his full time to buildings, grounds, and plant services.

The groups of employees under each of these specialists cannot be self-sufficient because they must work together to handle many problems.

A maintenance manager is the master mechanic's right-hand man, and he has charge of mechanics who spend most of their time working on production machines and equipment. The maintenance manager has an office force consisting of a dispatcher and a clerk.

The maintenance manager does not operate his department on a budget, and all labor and materials are charged directly to a production department or project. All expenditures by the maintenance manager's department are handled by one of three methods:

1. By an authorization from top management for capital expenditures of any amount.

2. By a job order from a production supervisor for any amount for expense items. Large amounts must again be approved by top management.

3. By a repair-budget requisition for expenditures of $50 or less charged directly against a departmental budget. The requisition is signed by the person in charge of the particular budget.

Production Prevents Scheduling

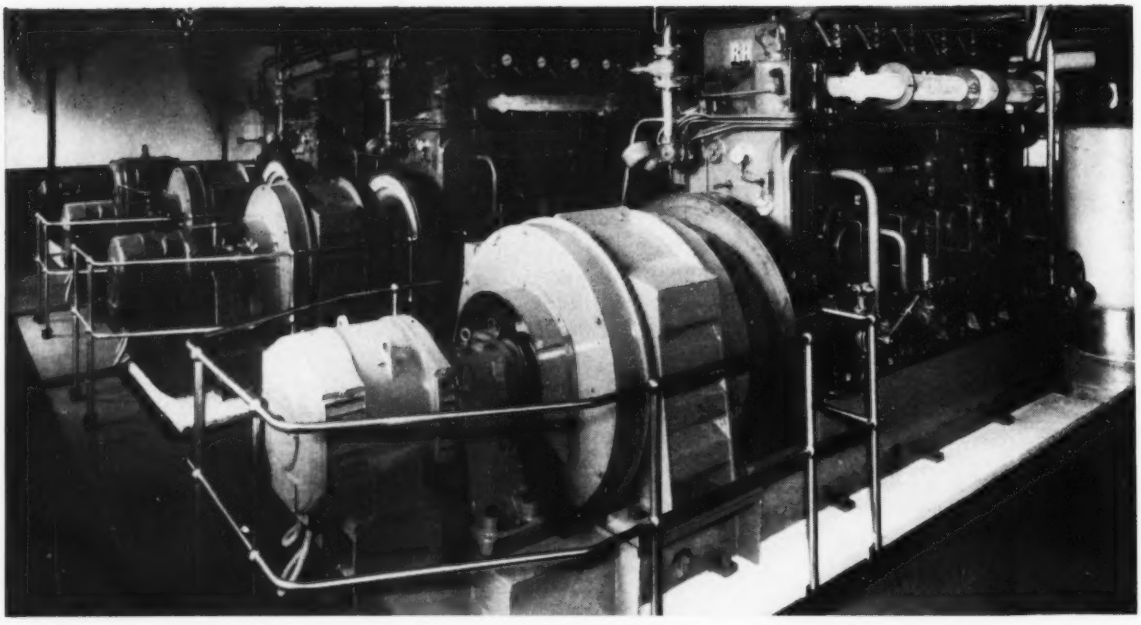
A scheduling system for servicing production machinery at a given time will not work out at our plant because we have only a limited number of machines of a particular type. We must schedule maintenance according to production requirements; and unless a serious fault is apparent, the machines must be serviced when they can be spared from production.

We use maintenance checking charts for machines in large departments. The charts are issued each month to the production department manager, to the foreman of the department section, and to the maintenance department.

The department manager and foreman review the charts and indicate on them changes they believe desirable. Defects that have developed in the past month are the basis of the changes indicated. The two men also indicate the machines that will not

CONTINUED ON PAGE 168

Based on a paper presented by F. R. Malmgren, A. B. Dick Co., at the Fifth Annual Plant Maintenance Show and Conference.



DIESEL PLANT supplies all the power requirements in this English mill. Waste heat from cooling water and exhaust gases is recovered.

British Mill Gets 77% THERMAL EFFICIENCY

▶ This mill has its own diesel equipment to supply power. Waste heat is recovered from the exhaust gases and cooling water to improve the efficiency of the boilers. Two oil-fired boilers, four waste-heat boilers, and a steam accumulator supply water for processing and general use.

By LEO WALTER

An English mill that weaves and finishes domestic fabrics and silk goods recently put in a new power plant with over 77% thermal efficiency. This efficiency is possible because the diesel engines in the plant are used to produce both power and heat, with the aid of boilers and a steam accumulator.

Equipment includes four four-stroke, direct-injection diesel engines to drive the generators, which supply a.c. and d.c. current for the entire mill. Three six-cylinder engines develop 204 bhp. each, and the other four-cylinder engine drives a 90-kw. machine. All four run at 600 rpm. Two oil-fired steam boilers are installed, plus four waste-heat boilers.

Waste Heat Is Recovered From Exhaust and Coolant

At their full-load rating the waste-heat boilers recover about 600 lbs. of steam from the four engines. The waste heat recovered from exhaust gases is 11 to 12% of the total heat supplied to the engines. About 40% of this heat would normally be lost in the exhaust gases.

The efficiency of the diesel engine system is approximately 77½%. This efficiency could be improved by using the cooling water from the lubricating-oil coolers, but the cost would not justify the expense or the complication.

The jacket water is used for space heating in one section of the mill and for heating defogging units mounted near the dyehouse ceiling.

When the defogging heaters are not needed, and when the space heaters are shut down in the summer, a heat exchanger in the cooling circuit comes into service. The hot water from the engines passes through the heat exchanger into a tank in the power house. Then the water is recirculated through the engines by the closed circuit.

Water for the heat exchanger is drawn from an adjacent river and passed through the cooler and into a tank. Later it is used for washing fabrics and mixing colors. This heat exchanger was designed and built by the engineering staff at the mill. Copper tubing is used throughout. Water temperature at the engine outlet is normally about 160° F.; return temperature is 150° F. Over 1-million Btus. per hr. are obtained from the engine jacket water.

Two Oil-Fired Boilers Supply Main Requirements

The Clarkson oil-fired boilers have a standard thimble-tube design. Each has 750 sq. ft. of heating surface with

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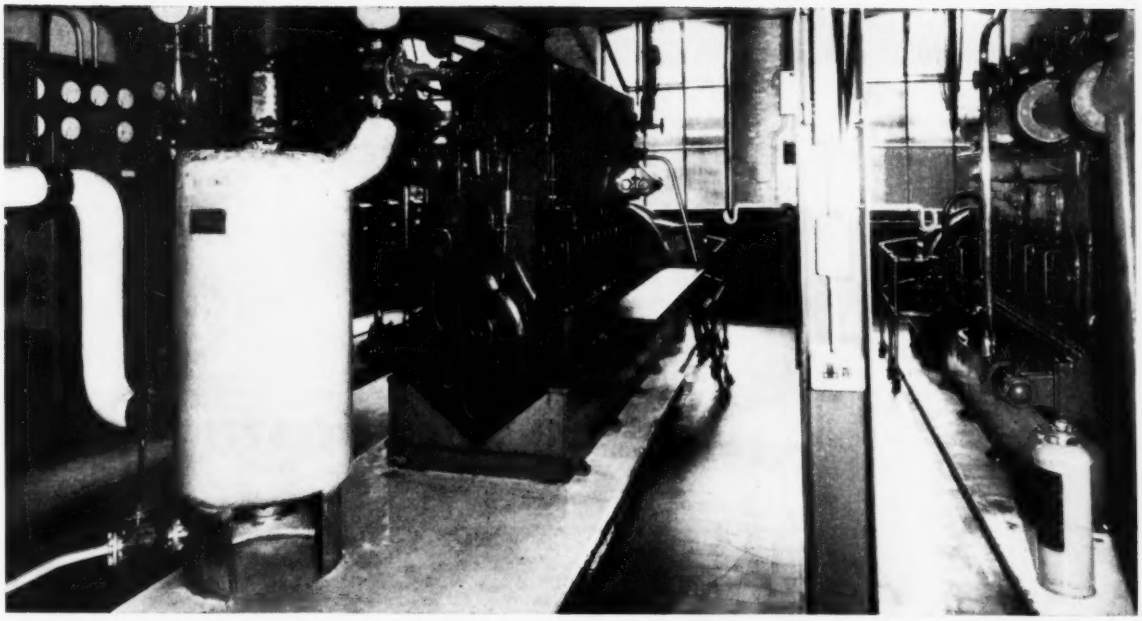

WASTE-HEAT BOILERS recover the heat from the exhaust gases. If the heat is not needed, the heaters are used dry as silencers.

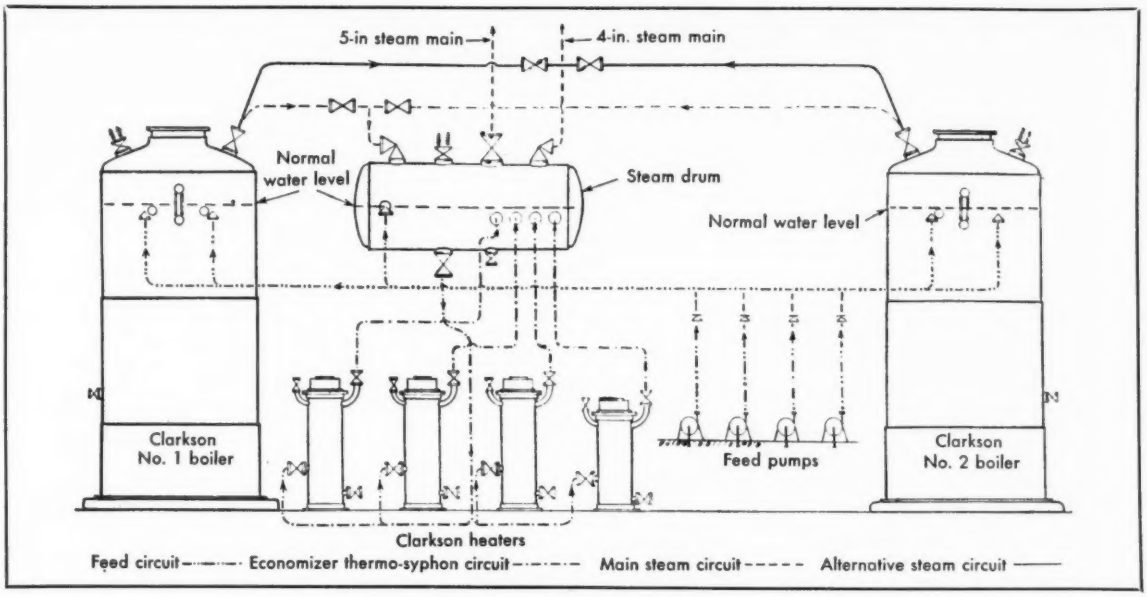

Fig. 1. Arrangement of oil-fired boilers to heat-recovery system

Suggestions for Heat-Efficiency Improvement

The heat recovered from exhaust gases depends on the temperature of the outlet gases; and the higher the pressure, the higher the temperature. With a hot-water waste-heat recovery system, as opposed to a steam system, exhaust-gas heat recovery would be improved 11 to 12%, or up to 17 to 18% of the total heat input; consequently, the over-all efficiency would be over 80%.

Sometimes a combined silencer-heat exchanger will supply an entire mill building with hot water from diesel waste heat.

Another possibility is to boost the outcoming cooling-water temperature in a waste-heat boiler and then use it as a hot-water supply.

Sometimes the most economical suggestion is to generate steam from warm cooling water in an exhaust-gas boiler and use it for space heating in the winter and hot water in the summer.

CHEMICAL FINISHING TECHNIQUES*

Glazing and Embossing
Crease Recovery
Crease Resistance
Side Effects
Improved Dye Fastness

By A. C. NUESSLE, Rohm & Haas Co.

Durable Glazing and Embossing

In the early days of durable glazing these two fallacies were commonly believed:

1. The resin must be on the fabric surface to hold the fibers flat
2. The luster is caused by the resin itself

Actually, the cotton or rayon fabric can be glazed without resin; but if such a fabric is washed, the water swells the fibers and yarns and the glaze disappears. The function of the resin, therefore, is not to impart the glaze but to make it durable by preventing the fibers from swelling in water. As indicated in Fig. 1, either a resin or a reactant may be used to hold the glaze, which actually is nothing but a smooth surface caused by the flattening of the yarns.

To produce a washfast glazing, the following procedure is used: The fabric is padded through the resin bath containing a small amount of softener or other lubricant to prevent damage on the calender. It is then dried to about 15% moisture content. Precautions should be taken to avoid local overheating that may prematurely set the resin. A friction calender imparts the glaze during several runs at 350° F. Finally, the fabric is cured at an elevated temperature to set the resin completely.

Embossing is similar to glazing except that the fabric surface is shaped into raised and depressed areas rather than flattened. The embossing may be deep or shallow in an almost infinite variety of patterns.

Schreinering is a type of embossing where the fabric is engraved with fine lines, several hundred to the inch, running at an angle to the weave; the lines impart to the fabric a deep-seated luster that varies with the position of the observer. It is more important in schreinering than in other forms of embossing to prevent the formation of thermoset surface resin that may clog up the fine engravings on the calender bowl. Certain reactants are useful here, since they do not ordinarily form a water-insoluble surface resin.

Processes Depend on Fiber Shrinkage

Whether the fabric is engraved or embossed, the physicochemical principles of the processes are the same. The durability of the finish in each case is due primarily to the reduced swelling of wet fibers; hence the action is similar to shrinkproofing.

In general, any resin or reactant that imparts shrinkage control is capable of sustaining a glazing or embossing. For the most durability, a combination of external and internal thermosetting resins is usually employed. As an alternative, a cellulose reactant plus a suitable water-soluble polymer such as polyvinyl alcohol may be used. Here the polymer is insolubilized by the reactant.

These formulations cause some degree of stiffness, depending on the proportion of surface resin. Where a soft finish is desired, the selection is limited to internal resins and reactants; certain reactants impart maxi-

* Third article in a series of four. See TW March and April for the first two articles.

Table I -- Effect of Thermoplastic Resin on Cotton Fabric

Polymer type (8% solids)	Shrinkage (%)		Crease recovery (degrees)		Elmendorf tear (lbs.)	Warp break (lbs.)	Abrasion resistance (TBL cycles)
	warp	fill	warp	fill	warp	warp	
None	6.8	6.1	65	61	3.8	45	7,700
Soft	6.0	5.7	70	66	3.2	47	29,800
Hard	6.0	5.3	52	48	2.7	53	20,500

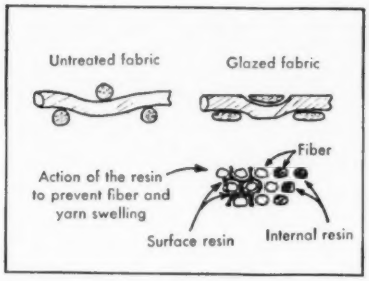

Fig. 1. How glazing is accomplished

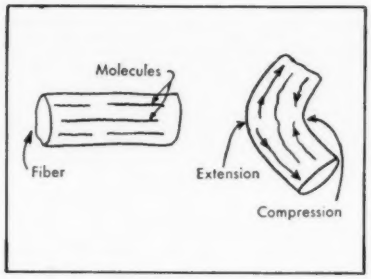

Fig. 2. Sliding of molecules when a textile fiber is bent

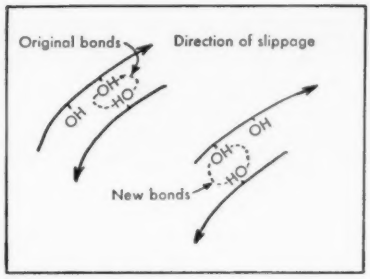

Fig. 3. Bonds between cellulose molecules are broken and re-formed when fiber is bent

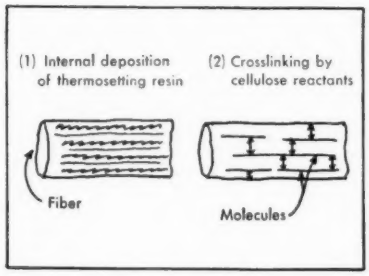

Fig. 4. Two methods of improving crease recovery of cellulosic fibers

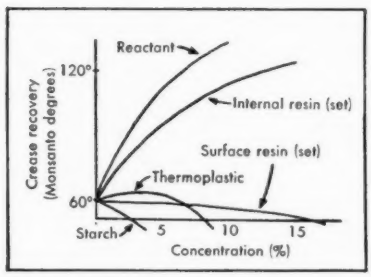

Fig. 5. Effect of various treatments on crease recovery of cotton fabric

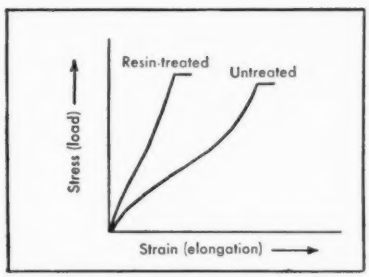

Fig. 6. Altered stress-strain curve of a resin-treated rayon fiber

mum softness and excellent durability.

Nylon and other hydrophobic fibers that can be heat set do not require resin to hold embossing. Resins may be used, however, to add body or crispness and to obtain a sharper pattern.

Acetate, with intermediate hydrophobicity, can be given a reasonably durable embossing without resin; but after proper resin or reactant treatment, the durability is increased. Additional crispness may be obtained at the same time by the proper selection of resin.

Crease Recovery

Fibers are made of long molecules oriented, to some degree at least, in the direction of fiber length. When a textile fiber is bent, the molecular chains are put under a strain and tend to slide past each other (see Fig. 2). This chain slippage takes place, with few exceptions, regardless of the types of fibers; but cotton and rayon fibers show a distinct tendency to remain bent after the bending force has been removed.

This tendency is due to the fact that cellulose is a polyalcohol with hydroxyl (OH) groups at regular intervals along the chain. The OH groups in neighboring molecules have an affinity for each other; and when the bending force causes the molecules to slide past each other, the bonds between some of the OH groups are broken and re-established in new positions (Fig. 3). As a result, the fiber tends to remain bent.

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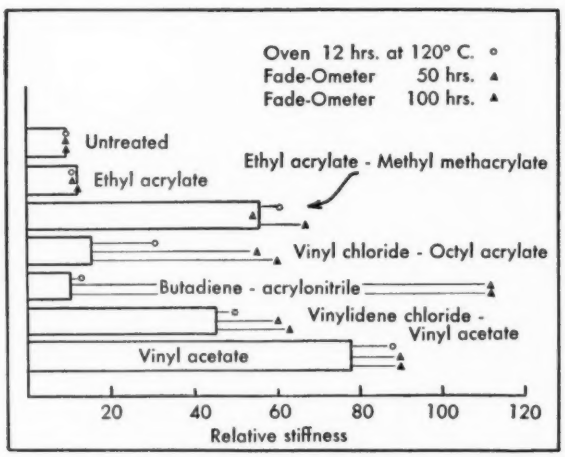

Fig. 7. Effect of heat and light on stiffness of finished fabrics

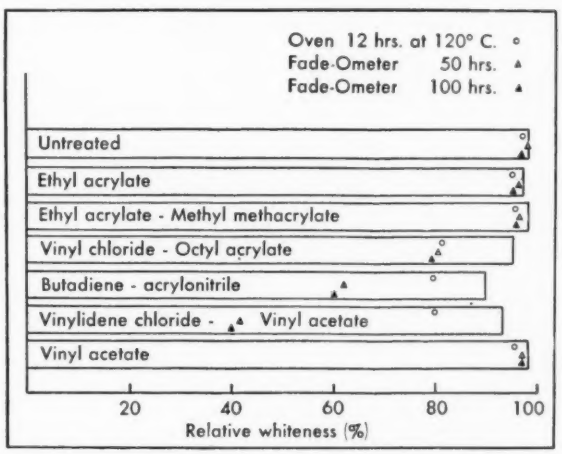

Fig. 8. Effect of heat and light on color of finished fabrics

ALL-METAL BINS are used in the entire supply room. Douglas Martin, first-shift supply clerk, uses a metal truck to place new shipments of supplies in their proper bins.

How a SUPPLY ROOM Combines Rapid Service With Simple Records

▶ The supply room at Anniston Mfg. Co. uses metal bins to store supplies by machine motions. Supplies are quickly located, and supply clerks have adequate time to keep the first records that are later itemized into detailed records of supply costs and inventory.

By **RICHARD B. PRESSLEY,** Associate Editor, TEXTILE WORLD

QUICK SERVICE TO SECTION MEN throughout the mill, an accurate system for issuing supplies and keeping records, an orderly supply room, and a small number of supply-room employees are some of the results obtained in the supply room at Anniston Mfg. Co., Anniston, Ala.

Only four employees receive and issue supplies, keep all records, and order supplies for three-shift operation at the 27,568-spindle, 638-loom mill.

Supply Bins Are Adjustable

The supply room is fully equipped with all-metal bins. The bins are in sections 7 ft. high, 3 ft. wide, and 1 ft. deep. The sections are placed together end-to-end in rows down the length of the supply room, and an aisle separates them near the center of the room. The aisles between the rows of bins are 30 ins. wide.

The widthwise partitions of the bins are removable and adjustable so that various sizes and various quantities of materials can be stored to save space. Each bin is marked by numbers for section, line, and bin.

All machine parts throughout the entire mill are grouped in bins by special motions. For example: travelers for all frames are grouped in one section; loom-drive parts for X and X-2 looms are grouped together; picking-motion parts are together; and harness-motion parts are together. All types of bolts, capscrews, and setscrews are placed near each other.

As a result of parts grouping, supply clerks quickly locate any given part.

Supplies are issued by one supply clerk on each shift to section men from all over the mill. The section men come to the supply room for service. The supplies are issued by written orders signed by the second hand or overseer of each department. All supplies are ordered by parts numbers.

When the supply clerk fills an order, he writes the bin number on the requisition sheet and files the sheet in a desk cubbyhole marked with the section man's number and shift.

Supply Clerks Start Records

All during the week, as he has time, the supply clerk transfers the list of

GROUPING by special motions results in quick serving to section men. Here, a 3-in. ball bearing used by the maintenance department is located next to a ½-in. ball bearing.

ADJUSTABLE PARTITIONS save space because small items for special motions can be placed next to larger ones. The small space here holds binder eccentric bushings.

LOCKED BINS safely store expensive tools such as drills, dies, and taps. The door of this section rolls back when it's unlocked. Each bin is labeled to show the part name.

WEEKLY SUPPLY COSTS are quickly figured by U. G. Craft, purchasing agent. From a throwaway sheet, he figures costs by sections and departments. Perpetual inventory also comes from the sheet.

parts ordered by the section men to another sheet. At the end of the week, all parts ordered by each section man are on an individual sheet marked with the bin section number and bin number. These sheets are turned in to the office of the purchasing agent, which is in the supply room.

In addition to issuing supplies, the supply clerks check new supplies received in railroad cars and trucks and place them in the correct bins. Each shipment of new supplies is counted to see that the parts correspond with the packing list enclosed with the order. Any material damage is also noted at the time so that notations of damage can be filed with the shipping company.

The purchasing agent uses the supply clerk's record of each section man's weekly supplies to record costs. The cost of each item is listed by bin number in an Acme visible record. From this record, the purchasing agent marks the total costs of any number of items used on the supply clerks' tally sheet.

Weekly Supply Costs Are Kept

The total costs of a sheet are added to give the complete supply costs of each section man each week. Then the section men's costs are added to give the supply costs by departments for the entire mill.

The supply clerks' tally sheets are also used to post all supplies used on a large inventory sheet. From this sheet, deductions are made on the inventory of parts kept in another Acme visual record.

When the deductions are made, a red tab is placed on all items that have reached the minimum inventory. Supplies are ordered once each week; and when they are ordered, the purchasing agent simply looks for red tabs to fill out his order form. When the order is made, each red tab is replaced with a green one; as supplies are received, the green tabs are removed. This system shows at a glance which supplies are low, which are ordered, and which are adequate. As a result, no item runs out.

The section men's tally sheets are kept for two months and then destroyed. If there is any question of a section man's supply cost, the tally sheets show what items were used.

Complete inventory, including counting all parts in the supply bins, is taken each six months. The actual count is always almost identical to that shown by the supply records. Two examples of six-month periods are: (1) a total supply inventory of $87,000 was only 0.02% ($17.40) off by count, (2) a $95,000 inventory was off only 0.15% ($142.50).

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SUNOTEX WO-220 For worsted "tops."	"Tops" treated with WO-220 will not discolor during storage. WO-220 scours easily, leaves wool in perfect condition for dyeing, even in lightest pastels.
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SUNOTEX RSO-48 For processing knitting and blanket yarns.	Has high antistatic properties. Is ideal for use where humidification is not available.
SUNOTEX TS-48 For processing dyed wool stock and yarns.	Can be scoured easily. Does not stain or develop odors.
SUNOTEX RWO-420 Used in spinning suitings, blanketing, carpeting, felts and wool blends.	Retains its outstanding scourability for long periods. The ideal replacement for lard oil—used where surface lubrication of wool is desirable.
SUNOTEX TSO-615 An inexpensive product for processing lower quality wool blends and reworked wool blends.	Has sufficient body to protect fibers. Eliminates fly and static problems.

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SUNOTEX RSO-48 For processing nylon and similar synthetics where static is a problem.	Provides excellent lubrication of the thread surface. It reduces static even when used in quantities of 1% or less.
SUNOTEX TS-48 Trough oil on full-fashioned machines. Also an all-purpose fiber lubricant.	Scours easily from viscose, acetate, nylon and mercerized cotton. Does not stain or develop odors.
SUNOCO FIBRLUB L-220 A nonemulsifying coning oil used in the throwing of nylon for full-fashioned hosiery.	Lubricates the sized threads, reduces "roll," increases snag resistance, prevents corrosion, produces a more uniform stitch.

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538 COTTON CONDITIONER "Lays the fly."	Keeps mill cleaner, improves working conditions, increases cotton yield.

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COTTON TESTING At Burlington Mills

► **Here are the tests that are done, how they're done, and what is considered good**

► **Burlington does not specify fineness in purchasing, for instance, but blends to get a 4.0 to 4.3 average**

By W. A. JULIAN, Manager, Burlington Mills Cotton Dept.

SCIENTIFIC KNOW-HOW is now enabling us to check the judgment of the cotton classer with accurate laboratory tests. Here's how we at Burlington use our laboratory in the selection and purchasing of cotton for our mills.

Fineness

We control fineness by blending and do not require the cotton shipper to guarantee a certain fineness.

At the beginning of a season we test a sample from each bale on the Micronaire and lay down the mix by bale numbers in the opening room. In our largest spinning plant, for instance, we lay down 116 bales for the 65,000 spindles. Each mix is made up of 12 to 16 bales. For these mixes, we try to select from as many shipping points as possible to even out possible geographical irregularities.

The composite fineness of the opened cotton is checked daily. We consider an average of 4.0 to 4.3 very desirable, and our ends-down rate is satisfactory at this fineness. We had trouble with the Delta 1952 crop because it was coarse and brittle and had a fineness of 4.5 to 5.0.

We used to believe that dye affinity was related to growing conditions (rain-grown or irrigated), but now we know that fineness has an important bearing on dyeing characteristics. We use rain-grown cotton from the Central belt and irrigated cotton from the West. It is our opinion that dye affinity is the same if average fineness is the same from day to day.

Based on a paper presented at the spring meeting of the Textile Div., American Society for Quality Control, held at School of Textiles, N. C. State College, Raleigh, N. C.

A recent experiment by Dr. Earl Berkley of Anderson, Clayton & Co. showed how a color effect was obtained in a fabric by varying only the cotton fineness. A single brown dyebath was used, but the sample had colors from light tan to dark brown.

Fine cotton neps easily, and that is another reason for our control of fineness.

Cotton fineness also determines the number of fibers in a cross section of the yarn. Another test by Dr. Berkley shows that a 10s yarn made of cotton with a fineness of 3.0 has 500 fibers in the cross section, compared with 250 fibers when the fineness is 6.0.

We use a Shadowgraph for weighing and a mechanical blender that we strip by hand for blending.

Strength

We make a composite breaking test on each shipment of cotton but do not attempt to test each bale for fiber strength. We try to maintain average strength of 80,000 lbs. per sq. in. or over. It makes little difference to us whether the actual test data or an index number is used. We use a gauge length of 0.464 mm.

Irrigated cotton is very strong, and the lots are more dependable. In rain-grown cotton damaged by weather, only the strong fibers are combed out and tested; so the Pressley strength is not accurate.

Cavitoma

We make spot checks for cavitoma by spraying the opened cotton with 2% phenolphthalien solution mixed with a wetting-out agent and 94% neutral distilled water. If the cotton turns purple, cavitoma is present.

In a year when cavitoma is prevalent, we test more than in a year (such as the 1953 crop) when the condition is not widespread.

We have run up to 10% cavitomic cotton in a mix without impairing quality, but we wouldn't want to go much above this percentage because of the potential effect on evenness and ends down. Comber waste on cavitomic cotton is 15% higher by test in our mills, and the yarn is 15% weaker.

Color

We use a Colorimeter to check background color of samples, but we leave to our classers the rating on preparation and foreign matter. The machine has been a great help in keeping our color pattern the same. We have achieved a Middling Light Spotted background on our picker laps from a mix of Strict Low Middling, Strict Low Middling Bright, Light Spotted Strict Low Middling, Middling Extra White Light Spotted, Medium Light Spotted, and Middling Spotted.

More-constant interpretations of grades for samples not represented in the grade box can be maintained with the Colorimeter, but the instrument cannot tell whether the color it reads is the result of spots, foreign matter, or background color. That's why the classer's differentiation is still so important in cotton-color measurement.

We have an experienced cotton classer operate the Colorimeter because improper measurements from poor calibration can thus be immediately detected.

Honeydew

Our chemist makes spot checks for honeydew, but the picker room is the best place to detect this molasses-like deposit on the fibers. If the fibers stick to the calender roll, there's a good chance you have honeydew.

CONTINUED ON PAGE 164

McCreary 1-pass system†

provides low cost finishing of synthetic tricots and woven fabrics

Exclusive features . .

- Automatic Pinning and Overfeed
- Roller Bearing Tentering Frames
- Electronic Guider Control
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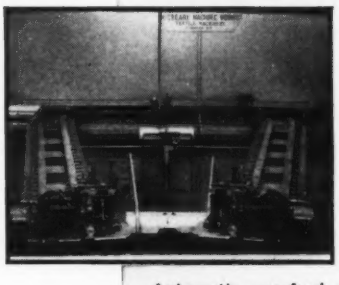
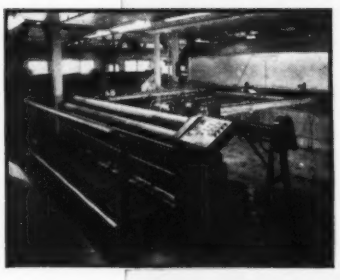
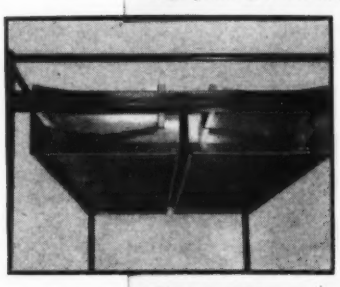
- *G-E Calrod Radiant Heat Setting
- *G-E Reactrol Control



Automatic overfeed combined with new type roller bearing tentering frame adjusts for cloths of any width from narrow nets to wide tricots.



New super-sensitive guider-finger, with electronic controls and *G-E Dynamic Breaking, permits very close, accurate edge pinning of the finest cloth.



Electro setting unit combines *G-E Calrod radiant heaters and *G-E Reactrol Control, an electronic system which holds cloth temperature within the most rigid tolerances.

The McCreary CONTINUOUS PROCESS embodies the most advanced electronic and mechanical processes yet developed for feeding, drying and setting nylon, other synthetic and resin treated fabrics of superior quality and at substantial savings. The automatic feed gives positive and accurate control of the feeding of any width fabrics, assuring greater yield. The high velocity jet type forced air dryer continues this high speed low-cost operation. The electro setter sets fabrics accurately within the known temperature range of all synthetics . . . and again at low cost and with high speed. Installed in famous mills located throughout the world, the McCreary Process has proven itself the lowest cost method of finishing cloth yet available.

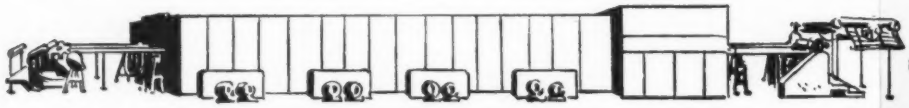
McCreary MACHINE WORKS, INC.

Manufacturer of Textile Finishing Machinery Since 1874

Cohoes, New York

* Reg. U.S. Pat. Office

† Patents Applied For



WRITE TODAY FOR DESCRIPTIVE BROCHURE

How the Management Team Can Build Better Human Relations

When Supervisors Have To Be Salesmen

Pointers FOR SUPERVISORS

- Getting a company program across to employees is essentially a matter of developing proper worker attitudes
- Knowing what factors influence these attitudes can help supervisors get employee cooperation and acceptance of company projects

By JAMES E. GARDNER
Assistant Director of Personnel Research, Fieldcrest Mills

MOST COMPANY PROGRAMS affecting employees have to be sold by the foremen. Whether the program involves quality, waste, efficiency, training, timestudies, or one of a dozen other things, the foreman's influence and actions are a paramount factor. He must do the selling.

There is often a tendency to minimize the difficulty of this function. This tendency is evident in the very use of the word "sell" to describe the securing of employee cooperation and acceptance. "Selling" connotes a quick and binding transaction.

But the sale of a commodity is something different from the fostering or changing of employee attitudes toward company programs. It is a useful caution to emphasize that fact to specialists who are so sold themselves on certain pet programs that they have little patience with the benighted fellows who don't immediately see the light.

A simple but disillusioning consideration is that employees may not become sold overnight; and even if sold today, they may become unsold tomorrow.

What Influences Attitudes

There are several points concerning the development of attitudes that deserve our attention in this matter of selling.

1. An employee's attitude toward any specific program or project will be influenced by his general attitude toward the foreman, the department, the mill, and the company. Similarly, an employee's attitude toward a specific program will be influenced by his attitudes toward other specific factors connected with his employment. An employee who dislikes his foreman and is disgruntled about six or seven other things is not a good prospect for the sale of a new program.

2. An employee's attitude will be influenced by the attitudes of the work group he belongs to. An individual is unlikely to take a favorable view of a new program if the attitude of his fellow workers is unfavorable toward it.

3. An employee's attitude may develop from either his own experience or from information that reaches him concerning someone else's experience. In either case, the attitude may have an erroneous basis, either a misinterpretation of his own experience or misinformation concerning someone else. An attitude based on such shaky ground is not necessarily a shaky attitude that is easy to change. If it is a strong attitude, the mere correcting of the facts may not change the attitude. If you dislike Joe Doakes for being a wife-beating rascal and then learn that he doesn't really beat his wife, you may still dislike him.

4. An employee is usually more favorably disposed toward those programs he has had a hand in setting up or at least has been informed about in advance.

The major method—and sometimes the only method—at the foreman's disposal in the selling of a program is the giving of information. But unfortunately, an attitude that is really strong, for any of the reasons discussed above, is not likely to change on the basis of information. Facts are overmatched when they are opposed to strong feeling. In most departments, however, the majority of employees do not often take an extremely unfavorable view of things. These employees can be influenced by information.

How Information Helps

This influencing of weak attitudes through information seems to be effective, however, only when the information is given under certain conditions.

1. The information given to the employee must be understood by him, must make some sense to him, and must indicate that his own interests are being considered.

2. The foreman who gives the information must himself understand it; and equally important, he must himself be convinced that the program he is explaining is a good one. Unless a man is adept at acting or hypocrisy, he cannot convince others about something he himself does not believe.

3. Information is usually more effective when it is given in advance of the actual installation of a program. This is particularly true, of course, when suggestions from employees are intended to be encouraged.

4. Where the foreman's intent is solely to inform employees concerning a program rather than to secure their suggestions, a positive approach is more effective. That is, it is more effective to tell employees "This is it" than to say "This may be it."

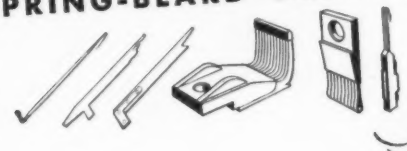
Certain programs, by their nature, are necessarily trial programs. But the business of asking the employees to try out every program is not necessarily a good approach. In some circumstances it suggests to the employee that the foreman is either not sure of his ground or is simply trying to install an outside program he has no sympathy for. Needless to say, the sales campaign is foredoomed to failure in these circumstances.

To sum up, the task of selling a program to employees is essentially a task of changing or fostering attitude, a difficult chore. The foreman's chief tool in this task is information. When an employee's attitude is strongly unfavorable, information is likely to be ineffective. When an employee's attitude is weak or open minded, information can be effective—but only when the foreman is himself sold on the program and his explanation is understood by the employee.

True alignment of needles, consistently even stitches, less "idle machine time" — and the resultant lower cost and extra amount of production — are a "product" of Textile's quality control. And it's because of Textile's precise, automatic and electronic control of manufacture that America's leading manufacturers of full-fashioned stockings and warp-knitted fabrics insist on Spring-Beard Needles, parts and leaded assemblies — by TEXTILE.

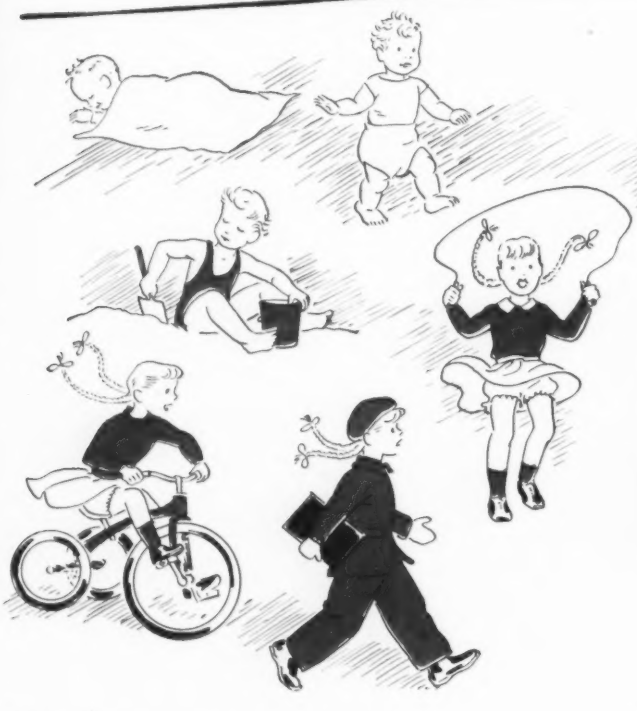
Textile

SPRING-BEARD NEEDLES



Wire Products Division

TEXTILE MACHINE WORKS, READING, PENNA.



From tot-wear to ties — for sweaters, fancy socks, or fine glove fabrics — Arrow Latch Needles, parts and leaded assemblies are available. We have them for nearly every type of circular, flat-bed and Raschel machine. Prompt deliveries are made from stocks in Reading, Pa., Asheboro, N. C. and Manchester, N. H.

Arrow

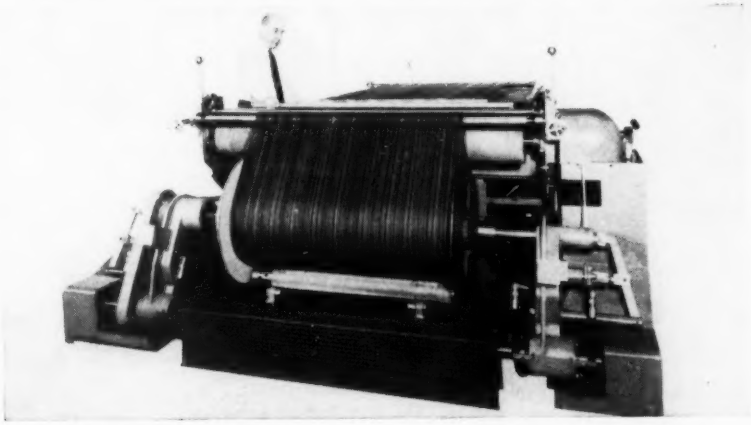
LATCH NEEDLES

Wire Products Division

TEXTILE MACHINE WORKS, READING, PENNA.

TEXTILE Equipment NEWS

Bachmann Uxbridge Unveils New Slasher Head



SLASHER HEAD for the Gentle-Air dryer automatically doffs and loads loom beams.

A new automatic slasher head end for use with the Gentle-Air dryer has been developed by Bachmann Uxbridge Worsted Corp., Research Dept., Uxbridge, Mass.

A feature of the new unit is its ability to doff a full beam and load an empty one. Both mechanisms are operated hydraulically. One man can complete the full doffing and loading cycle in less than a minute. Another special feature is an automatic self-aligning compressor roll, which can be regulated to any desired pressure.

The operational sequence is controlled by three levers. Starting with an empty beam in the machine, the operator uses the first lever to bring the compressor into position, and the machine is ready to run. When the beam is filled, the second lever releases the compressor by automatically stripping the spindles; then the beam can be dropped on to a dolly or hoisted directly from the spindles by an overhead tramrail. An empty beam is run into position, and when the third lever is pushed, the spindles automatically bring the beam up into running position. A gauge shows when the holes are in line for picking up the empty beam, and the beam is automatically positioned in the center of the unit.

The operator cannot by chance strip the loaded spindles until the beam is in the doff position, and he cannot doff the beam until the compressor roll is released.

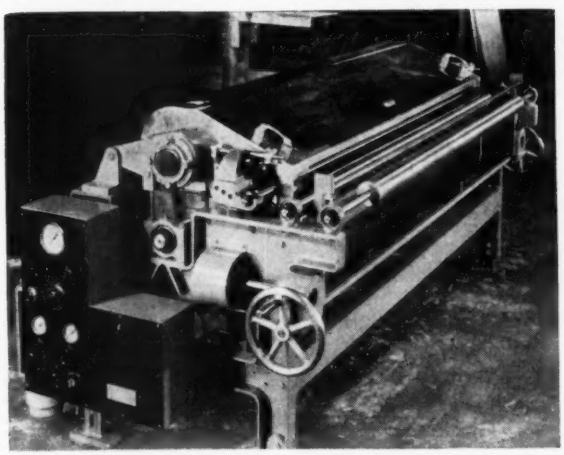
The new lease-rod bracket saves time and effort in positioning the rods. Lease rods are locked into place by matching a small hole in the rods with a corresponding lug on the support frame. Below the lease rods, the waste pan can be easily cleaned of starch, lint, and other waste.

Fresh air is sucked directly under the unit on its way to the dryer; so the air acts as a cooling agent for the motors under the front end. Before the air enters the dryer, it is cleaned by a screen, which filters out dust, dirt, and lint picked up by the air suction.

The new head can be built to accommodate any beam width or circumference. However narrow the beam, the self-centering action is said to be always effective.

Circle T-1 on Reader-Service Card

Size Applicator Is More Than Just a Size Box



SIZE APPLICATOR has a completely covered, insulated size pan. The pan has a volume of 14 to 20 gals., depending on mill requirements.

The Griffin Size Applicator, developed by Ira L. Griffin & Sons, Box 1576, Charlotte, N. C., is called an applicator because it is said to do more than an ordinary size box. It is said to prevent the congealing of size on exhaust fans, hoods, and ductwork and to eliminate slasher cloth changes and the dilution and breaking down of size. It also keeps floating fibers, which result from set changes and cleaning, from getting into the size pan. In turn, shedding is minimized in the weave room.

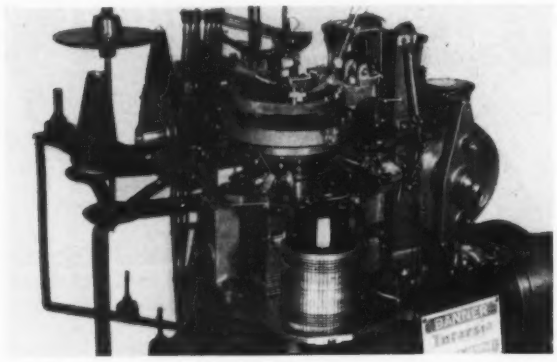
There is said to be no rolling or taping of the yarn as it passes through the machine. The size pan is completely covered; so cold air is kept out and warm, moist air is kept in. Low temperatures are used, and Sizerite rubber-covered rolls can be used with the machine.

Since the size pan has a small volume, 14 to 20 gals depending on the level desired, waste is said to be reduced up to 50%. The reduction in waste is said to pay for the applicator in 1 to 1½ years.

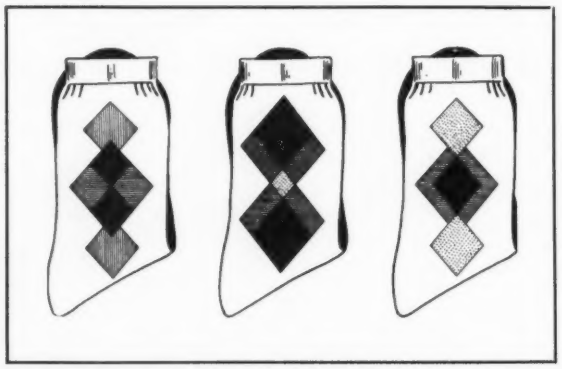
The size pan is insulated to keep steam consumption to a minimum; and the size solution is not exposed to corrosive metals.

Circle T-2 on Reader-Service Card

Intricate New Hosiery Designs Possible With Intarsia Machine



INTARSIA MACHINE has a 96-move control drum with a device to increase the pattern scope to 192 moves. The cylinder permits patterning on any quarter of the sock.



NEW DESIGNS that have been limited to hand-operated machines can now be made on the Intarsia machine. Each design is in solid color with sharp outlines.

A new machine to produce solid-color patterns with sharp outlines on socks, which were only possible before on hand-operated machines, has been introduced by Hemphill Co., Pawtucket, R. I. The knitting machine is known as the Vari-Inlaid-Pattern Intarsia machine.

The machine has a single feed with seven yarn fingers. The sharp patterns are made possible by a simplified individual-needle control system. Each needle is positively controlled in its upward and downward movements by using 20-step jacks.

The jack pattern control mechanism is arranged in two banks. Both banks are controlled from the same drum. This arrangement allows the needles to be raised out of action on one bank and put in action on the other bank.

The cylinder can be automatically operated to permit patterning on any quarter of the sock. A 96-move control drum uses an automatic shogging device and increases the patterning scope to 192 moves.

A device that cuts and holds each yarn individually and automatically saves knitters' time and saves waste of costly yarns. Each sock is pressed off after completion and picked up with no strings attached.

The machine is built with elastic and reinforced heel and toe mechanisms in 12-gauge 84x4-in., 12-gauge 108x4-in., and 36-gauge 160x4-in. sizes.

Circle T-3 on Reader-Service Card

New Napper Features High Speed, Close Control

The new napping machine developed by David Gessner Co., Worcester, Mass., is said to produce up to 200% more on certain fabrics than its older napper. Four new design features are (1) a control for varying the torque of the napper rolls, (2) self-correcting speed controls for the napper rolls, (3) a positive in-speed control, and (4) an infinitely variable tension control and a tension indicator. Maximum napping energy can be applied from both series of rolls. The number of runs is reduced; for even at high torques, the worker rolls stay in the proper napping speed range.

All controls have individual indicators. Since the pile and counterpile rolls are operated independent of each other and the cloth speed, the range of napping effects is increased. The control settings are automatically stabilized, which prevents variations caused by changes in load temperature, humidity, and other conditions that affect conventional belt and variable-pitch pulley drives. A safety device in the feed roll, which is torque activated, takes up loose cloth and prevents smashes.

Circle T-4 on Reader-Service Card

Large-Package Twister Has An Aluminum Frame

Yarn packages up to 9 lbs. are produced on the new twister made by Medley Mfg. Co., Columbus, Ga. The twister was developed by J. A. Bradshaw and announced in 1952 [TW, Dec. '52, p. 109].

An outstanding quality-improving feature of the twister is said to be its exact ring-to-spindle concentricity. The gauge is adjustable from 3 ins. up to any "reasonable" maximum. Traverse is adjustable from 8 to 12 ins.

Traverse speeds are said to be high enough to result in a reduction of doffing and winding costs.

The working parts of the twister are mounted in high-strength aluminum-alloy extrusions made with T-slots. The possibility of the rail warping has been reduced by not breaking the skin of the frame metal with drilling or machine operations. Spindles are exactly plumbed, and frame erection is said to be simple enough to make preliminary shop erection and doweling of parts unnecessary. Feet are individually adjustable.

The ring rail is positioned inboard with an offset ring-holder; so full-length and -width separators can be used.

Circle T-5 on Reader-Service Card

75-Gauge Hosiery

A 32-section, 75-gauge full-fashioned knitting machine has been introduced by Karl Lieberknecht, Inc., Reading, Pa. Several machines are already in operation. The new machine, which can turn out 10- and 12-den. hosiery, is built with the automatic features found in Lieberknecht machines of other gauges.

Circle T-6 on Reader-Service Card

TEXTILE *Equipment* NEWS

Everyone has different ideas

...about desizing agents

POWDERED?
LIQUID?
POWDERED HIGH TEMPERATURE?
CONCENTRATE?
LIQUID CONCENTRATE?
No matter what your preference, you're sure to find your choice, for the best desizing agents are NEOZYMES by Royce.

You buy the best when you specify a desizing agent by Royce—guaranteed controlled quality. Rigid laboratory control eliminates costly reprocessing caused by use of non-uniform products. And behind all Royce products stands the Royce Technical Service, backed by years of practical textile experience. Desizing problems? Let Royce solve them for you. Write for additional information and data sheets.

NEOZYME®: a rapid-acting, water-soluble white powder for heat-saving low temperature desizing at 120° to 125°F. Outstanding money value . . . 1 pound equals 8 pounds of liquid enzyme—*cuts your storage space 87½%.*

NEOZYME HT: a concentrated white powder for high speed desizing at high temperatures. Completely water soluble. Needs no salt for activation. Retains potency *longer* than other enzymatic desizers.

NEOZYME Special: a standardized, starch desizer. A fast-acting liquid of proven superior heat stability at 160° F—better than other liquid commercial enzymes.

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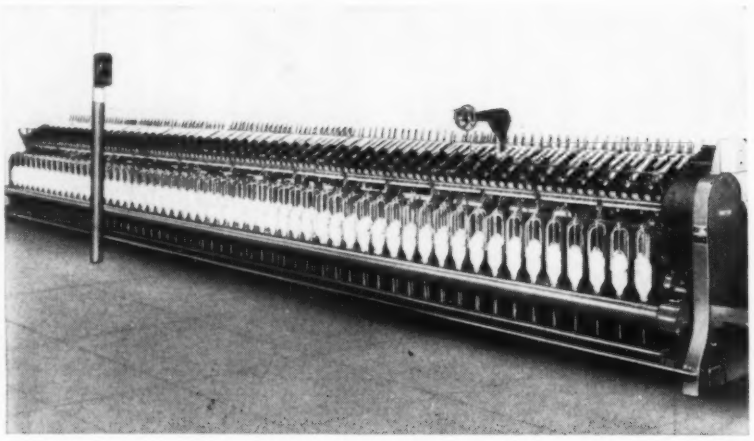
Manufacturers of Chemicals for the Textile Industry

3910

Details on Whitin's New Worsted Roving Frame

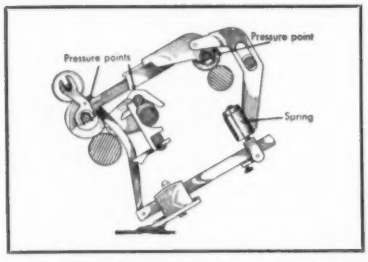
The new American-system roving frame recently announced by Whitin Machine Works, Whitinsville, Mass. [TW, April '54, p. 109], features a new top arm and ratch control and an improved apron system. Evenness and quality of worsted roving are said to be improved because heavier sliver is processed. Details on improvements made on the Quik-Set frame are on page 212.



QUIK-SET ROVING FRAME processes up to 100-grain worsted and 120-grain synthetic sliver. Recommended draft is 8 to 20. The double-apron system has been improved with a recessed knurled middle top-apron roll that allows longer fibers to slip without losing grip on shorter fibers. Fiber lengths from 2½ to 8¾ ins. are handled.

Circle T-7 on Reader-Service Card

Details on Worsted Spinning Frame



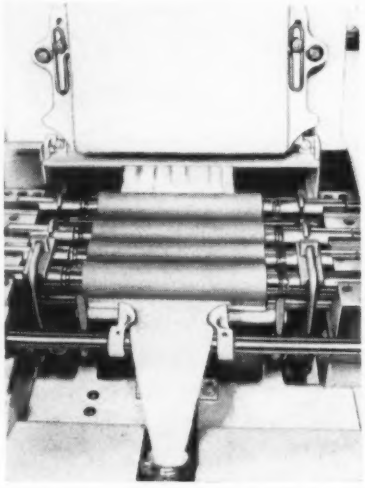
SUSPENSION WEIGHTING on worsted spinning frame is controlled from screw adjustment on the spring housing. The middle roll is weighted by the arm as well as spring pressure. Revolving top clearers are held by support on front section. To change roll settings, the thumb screw underneath and Allen screw on top (not shown) are loosened and the roll-gear swing arm repositioned. Clip bearings control the position of the rolls, and the anti-friction bearings keep the draft zone oil-free.

Whitin's American Superflex spinning frame [TW, April '54, p. 109] for its American worsted system has the same basic features as its F-2 frame. The major change is a new top arm for top-roll suspension and weighting. In addition, the ends have been streamlined, and the ring rail is spring counterbalanced for easier doffing. Antifriction bearings can be applied to the cross shafts.

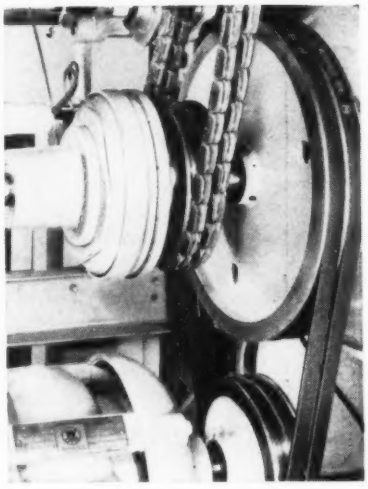
The frame has a traverse of 11 ins., adjustable to 9 ins. If traverses below 9 ins. are desired, the improvements can be applied to the F-2 frame. For traverses over 9 ins., knee brakes are recommended. Normal ring sizes: 1½ to 3½ ins.; normal gauges: 4 or 4½ ins. The frame can be equipped with independent twist gearing, and pulleys for reverse twist can be supplied.

Circle T-8 on Reader-Service Card

Features of Whitin's New Drawing Frame



FOUR-OVER-FIVE DRAWING handles fibers from ⅞ to 3 ins. with minimum setting changes. Front roll speed is 150 ft. per min. The main draft is between the second and third rolls. Eight ends of combed sliver are here being processed. The synthetic-covered rolls are mounted in antifriction bearings, and the screws holding the bottom-roll bearings can be reached from above.



ELECTRIC CLUTCH is used in conjunction with the electrical stop motions; so the number of parts has been substantially reduced. The electric clutch also gives smooth acceleration. The V-belts provide a positive drive to the front rolls; and the drive is controlled by three push buttons, one in front and two in the rear. The drive can be jogged from any position.

The Even-Draft drawing frame for the cotton system announced [TW, April '54, p. 109] by Whitin Machine Works, Whitinsville, Mass., features four-over-five drawing and an electric clutch.

Other features are an extended sliver table with lifting rolls higher and 10 ins. closer to the cans. With this construction, eight ends of combed sliver can be run. The table also has a pan to help support the sliver.

To change from six to eight ends, only one gear change is necessary.

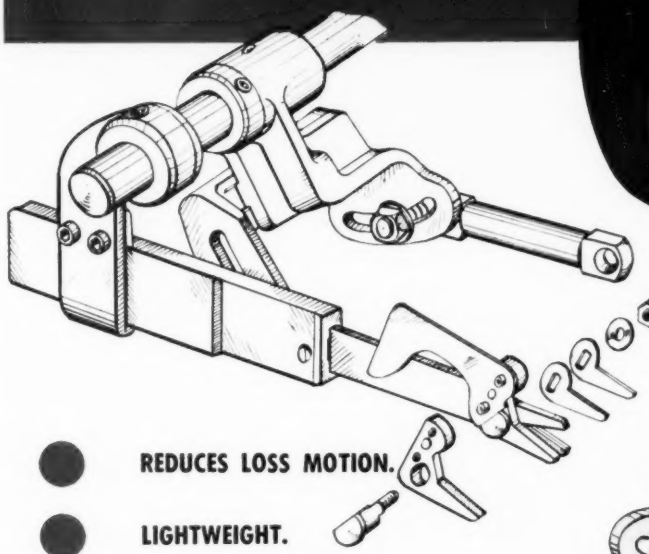
Electric stop motions operate for end breaks, can run-outs, and lap-ups or plugs in the trumpet. A full-can stop motion can be operated by a preset counter.

Typical production figures (80% efficiency): 20.6 lbs. per hr. producing 60-gr. sliver; 18.6 lbs. per hr. making 54-gr. sliver; and 17.1 lbs. per hr. making 50-gr. sliver.

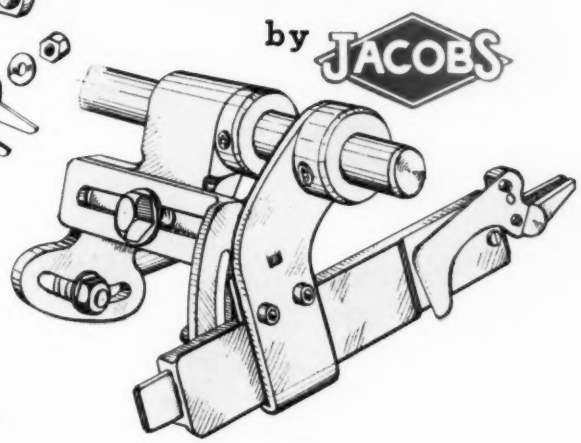
Circle T-9 on Reader-Service Card

Now Eliminate "DRAG-INS"

with the New "VERYBEST" THREAD CUTTER



by JACOBS



- REDUCES LOSS MOTION.
- LIGHTWEIGHT.
- CUTS AND HOLDS all types of yarn.
- FITS all battery looms. Simple construction.
- SAVES DOWN TIME.
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Let a JACOBS Service Engineer show you all the cost savings this new Thread Cutter can give you now!

THE BULLARD CLARK CO.

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SOUTHERN DIVISION
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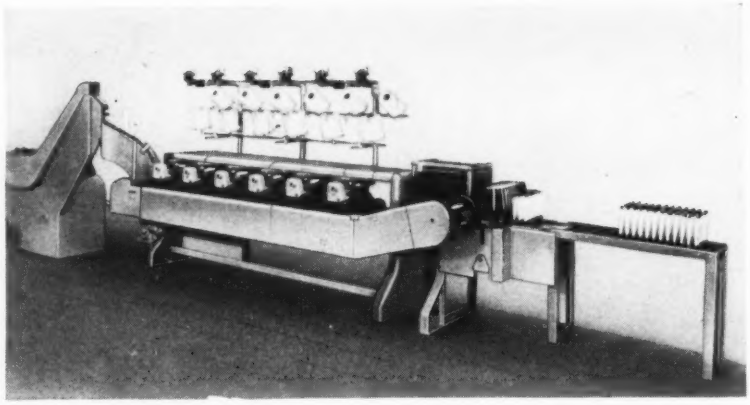
NORTHERN DIVISION
Danielson, Conn.

Whitin's High-Speed Quiller

The 12,000-rpm. Speed-Matic quiller recently announced [TW, April '54, p. 118] by Whitin Machine Works, Whitinsville, Mass., winds bobbins that are said to have maximum yarn weight, even density, and excellent winding off. Continuous-filament yarn can be quilled with short traverses with no increase in tension. Three features are the layer-locking, nonpatterning action of the traverse, a "prime" wind ratio, and progressive but varying motion of the traverse motion. The quiller winds a tailless bobbin, which is built without the use of a feeler. All wind ratios are achieved at maximum spindle speed, and the bunch control is precise to 30 yds. The yarn is drawn straight from the tension device.

Winders are available in normal units of four, six, or eight spindles up to a total of 24 spindles.

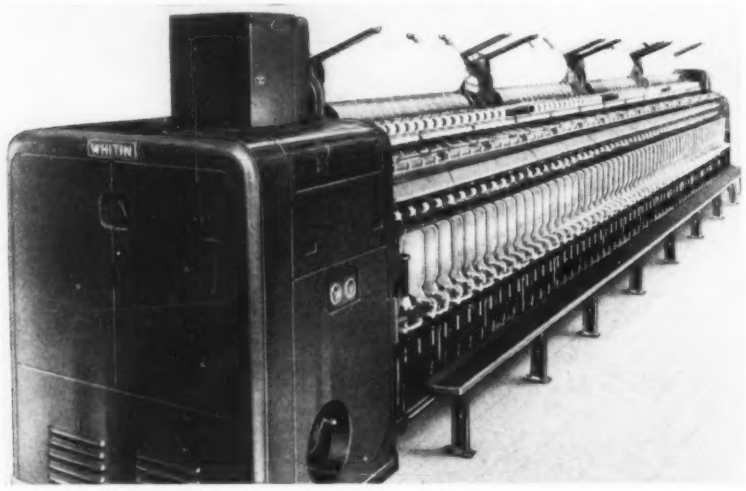
More details on page 214.



SIX-UNIT WINDER has a streamlined creel that will accommodate cones of any size, cheeses, twister packages, and tubes. The conveyor is an integral part of the winder; it supplies empty bobbins as needed and carries full bobbins to the stacking rack. The pinboarding attachment (right) is optional; it is recommended for mills doing high-quality spinning and continuous-filament work. The automatic empty-bobbin loader (left) is standard equipment.

Circle T-10 on Reader-Service Card

Whitin's Flex-Spin Wool Spinning Frame



The Flex-Spin wool spinning frame, announced last month [TW, April '54, p. 109] by Whitin Machine Works, Whitinsville, Mass., has about 20 improvements over the Model E. It will produce yarns from 3/16 to 9 run and higher. With paper tubes, the traverse

CONTINUED ON PAGE 208

FLEX-SPIN WOOLEN FRAME has adjustable roving guides for changing number of jack-spool ends. New jack-spool arms with a slotted track allow the jack spool to be lifted out horizontally, and less waste is made because of a change in the angle. Adjustable back-roll cleaner can be cleaned during operation, and the back rolls run against nylon inserts. Double-boss top rolls are spring weighted to relieve strain on the traverse mechanism.

Details on Superflex Cotton-System Spinning Frame

The new cotton-system spinning frame [TW, April '54, p. 109] announced by Whitin Machine Works, Whitinsville, Mass., has all the features of the F-2 and F-3 frames, plus improvements. The new frame has a standard width of 39 ins. Traverse is adjustable from 8 to 11 ins.; and up to a 16-oz. package can be made. Drafts up to 50 can be successfully run.

A combination builder is standard equipment; it will produce filling, warp, or combination winds. For traverses over 9 ins., filling or combination winds are recommended.

The ring rail is counterbalanced with springs, and over 500 lbs. of dead weight have been eliminated. The ends have been streamlined, and compound gearing in the head end controls the roll speed. With a new draft constant, usually only one gear has to be changed.

A one-shot Bijur lubrication system is standard equipment.

The cradle used depends on the fiber length: An American cradle is used for staple lengths up to 1⅛ ins., a staple cradle to 1¾ ins., a medium-rayon cradle from 1 7/16 to 2 ins., and a rayon cradle from 2¼ to 3½ ins.

The front roll and back roll intermediate sections are interchangeable; so spare-roll stocks are reduced. Clean-draft nonlubricated top rolls are used on the middle and back lines, Climax ball-bearing top rolls on the front line.

The top rolls can be center-suspended with a Cleanalign top arm at extra cost. This arrangement eliminates cap bars and saddles, and weight control is simple to adjust.

Various types of creels can be provided, as well as mill-specified motor drives.

The frame can be equipped with Pneumafil, and an undercleaner can be mounted without any frame modifications.

Circle T-11 on Reader-Service Card

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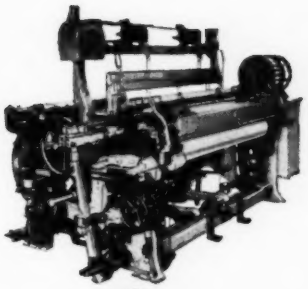
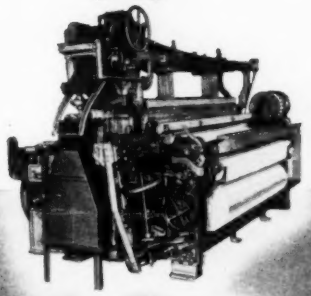
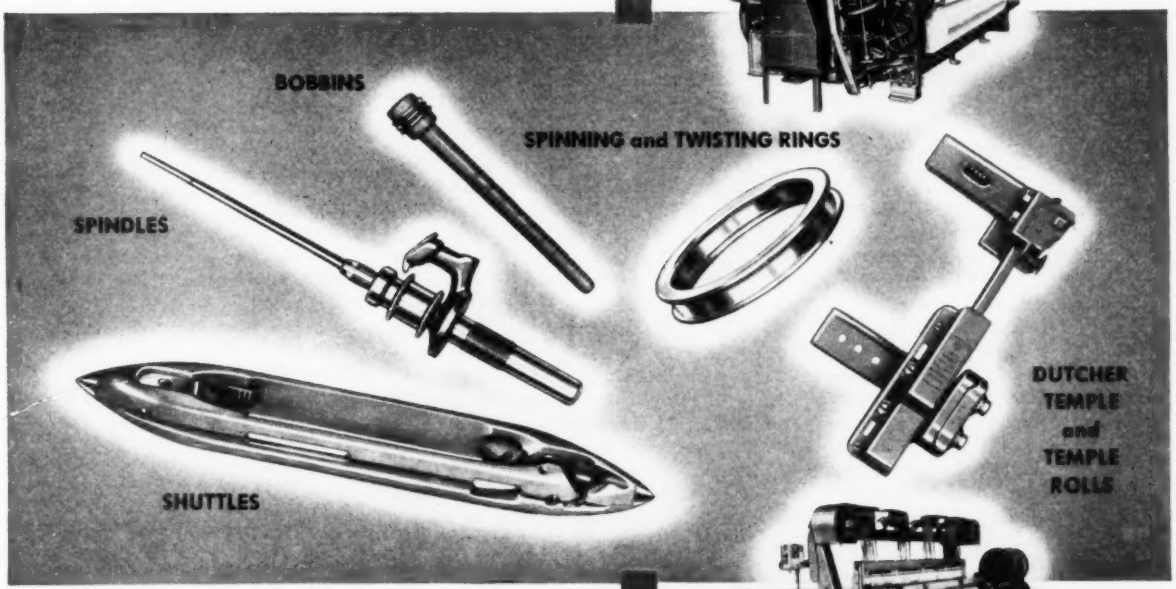
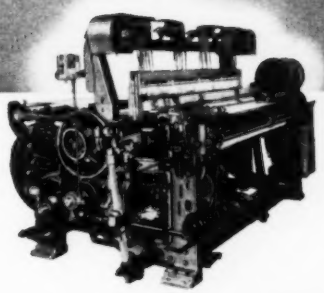


MODEL X-2

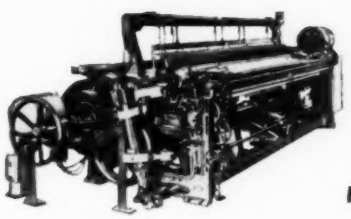


MODEL XD





MODEL XP



MODEL XL

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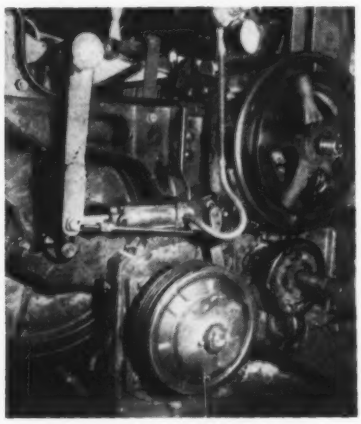
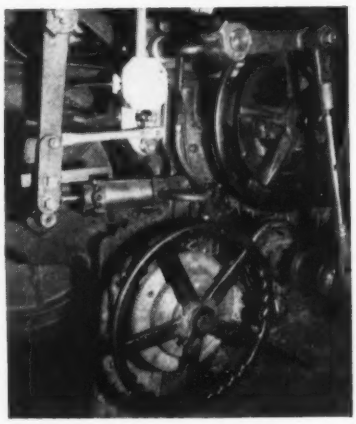
Three New Loom Let-offs Control All Types of Warps



CONSTANT WARP TENSION of any weight results by setting the air-line gauge. When warp tension becomes greater than the air pressure, a lever releases the brake; and the warp is let off.



ELECTRIC BRAKES control the amount warps are let off on a second resistance-type let-off. Air pressure and levers work much the same as on the mechanical brake let-off arrangement.

Three new let-offs said to be adaptable to all types of looms and all types of warps are being manufactured by Southern Loom Development Co., 2222 Augusta St., Greenville, S. C.

The first let-off is a resistance-type let-off and operates much like an automobile brake. The take-up pulls the warp, and the let-off simply maintains the proper tension on the warp.

One section of the braking mechanism is keyed to the let-off pinion shaft, and the other part is doweled to an adapter plate bolted to the loomside. A compressed-air cylinder is mounted above the braking mechanism and controls the warp tension to the exact pound. An 85-psi. air line is connected to the air cylinder.

When drag rolls are used, warp-tension control comes from a tension roll added to the drag-roll assembly. On regular weaves, warp tension is controlled directly from the whiproll lever as on conventional let-offs.

The let-off does not have any springs or beam followers. The desired warp tension is set with an air-pressure metering valve at the let-off. A dial shows the pounds per square inch. If a 50-lb. warp tension or 500-lb. warp tension, for example, is needed, the valve is adjusted at a full warp; and the tension is said to remain constant from full beam to empty beam.

The air line can be eliminated and weights used to control the warp tension if desired.

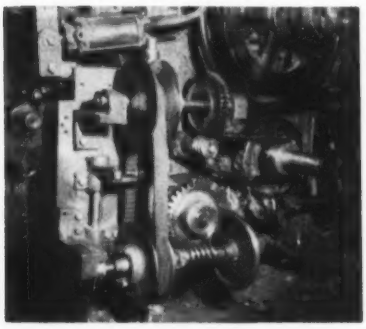
The third let-off is a positive let-off driven from the camshaft. It uses a Reeves variable-speed unit to keep warp tension constant from full to empty warp beam.

The variable-speed unit has a ratio of nine to one and is controlled through a tension roll added to drag rolls or directly by the whiproll lever when regular whirolls are used. An air cylinder and levers control the movement of the drive.

In addition to constant warp tension, the drive takes care of great variations in picks per inch.

Cloth construction of 20-ppi. variation, for example, can be woven without adjusting the let-off.

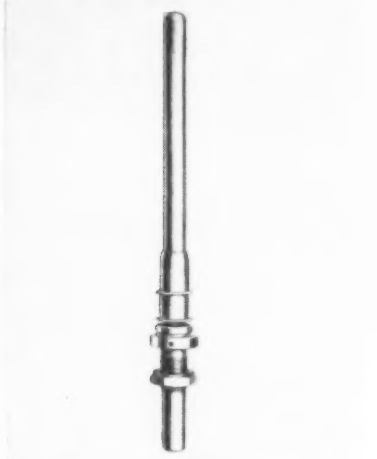
When picks per inch are varied greatly, say from 100 to 140, the worm and gear driven by the roller chain on the camshaft are changed to another size.



THE POSITIVE-DRIVEN LET-OFF receives its initial motion from the camshaft of the loom. Then a Reeves variable-speed drive measures the amount the warp is to be let off. The drive is controlled by warp tension and an air cylinder.

Circle T-13 on Reader-Service Card

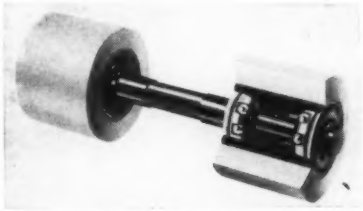
Split-Sleeve Spindle Base Is Easy To Disassemble



NEW BASE for Hartford spindles has been developed by Hartford Machine Screw Co., Hartford, Conn. This new base has a split-sleeve design, which is cheaper to manufacture. The split-sleeve base is easy to disassemble, and time is saved when bearings need lubrication (normally at five-year intervals), and bearings are easily reached in case of damage. Sample bases for test purposes are available from the company.

Circle T-14 on Reader-Service Card

New Climax Top Roll Runs with 200 Lbs.



TOP ROLL for processing blends, especially on American worsted system, carries up to 200 lbs. weighting. Outside diameter with cot is 2½ ins.

An extra heavy duty Climax ball-bearing top roll has been announced by Product Sales, Inc., Whitman, Mass. The new roll can be weighted with up to 200 lbs., and this ability to be heavily weighted makes the roll valuable for frames running blends, especially on American-system worsted spinning and roving frames. Heavy weighting on the roll is possible because larger bearings are used. Without a cot, roll diameter is 1⅞ ins.; with a cot, roll diameter is approximately 2¼ ins.

The standard features of Climax rolls are built into this roll. No lubrication and reduced cleaning and picking are said to be two advantages.

Circle T-15 on Reader-Service Card

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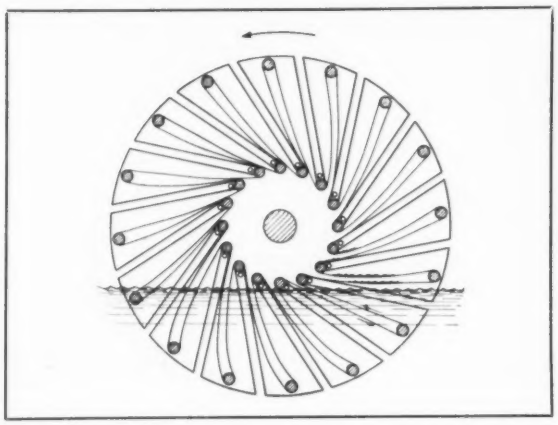
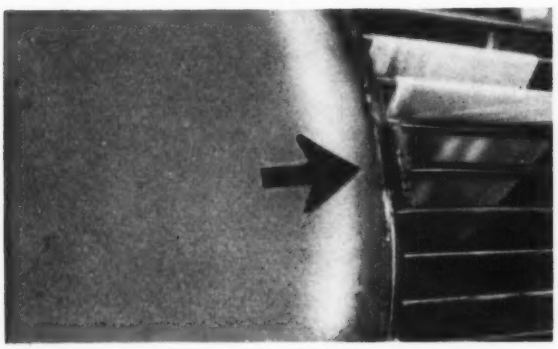
Details on Improved Barotor Are Released

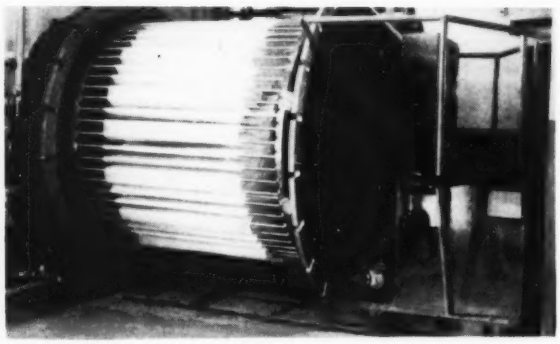


RADIAL PATTERN of the fabric loops on the rotor is skewed in the direction of rotation. The fabric enters the bath at a gliding angle and leaves parallel to the surface. Each loop leaves the bath carrying a pool of liquid, and the weight of this liquid takes up slack from the loop behind. Thus there is a forward shift of all parts of the fabric on each turn of the rotor. This forward shift is usually held to 1 or 2 ins. but is adjustable up to several inches. The forward shift is said to prevent bar marks.

TWO OPERATORS LOAD the Barotor from an elevated platform. The fabric is in a sandwich of layers, and 10 100-yd. pieces are loaded in 6 mins. All ends are attached with temporary clamps to an outer bar; then each bar is dropped into its guide track, and it rolls to the inner end of the track carrying the fabric into place. One operator jogs the rotor with a foot switch, and both operators pay out excess fabric as a shrinkage allowance. After all 64 bars are loaded, the clamps are removed and the ends are sewed together to form endless wraps.



PATENTED DOOR is the feature of the Wiesner-Rapp Barotor. It doesn't have to be bolted or unbolted, and the quick opening is said to reduce the time of the dyeing cycle. The basic features of this model are the same as the Barotors made by the other companies. Barotors are made under a royalty-free license with Du Pont.



FIRST INSTALLATION of the Barotor is this James Hunter model at Waldrich Co., Delawanna, N. J. The autoclave is set into the outside wall to save floor space. Sampling device on the rim of the motor allows inspection of shade and intensity without loss of pressure or interruption of the rotation.

Du Pont's Barotor [TW, Oct. '52, p. 107; July, '53, p. 152] is to be produced by several dye-equipment manufacturers under royalty-free licenses. Licensees include James Hunter Machine Co., North Adams, Mass., The Wiesner-Rapp Co., Buffalo, N. Y., Riggs & Lombard, Inc., Lowell, Mass., and Rodney Hunt Machine Co., Orange, Mass.

The Barotor is a pressure-dyeing (25 psi.-ga.) machine that handles a wide range of filament and spun-yarn fabrics in the open width at temperatures up to 265° F.

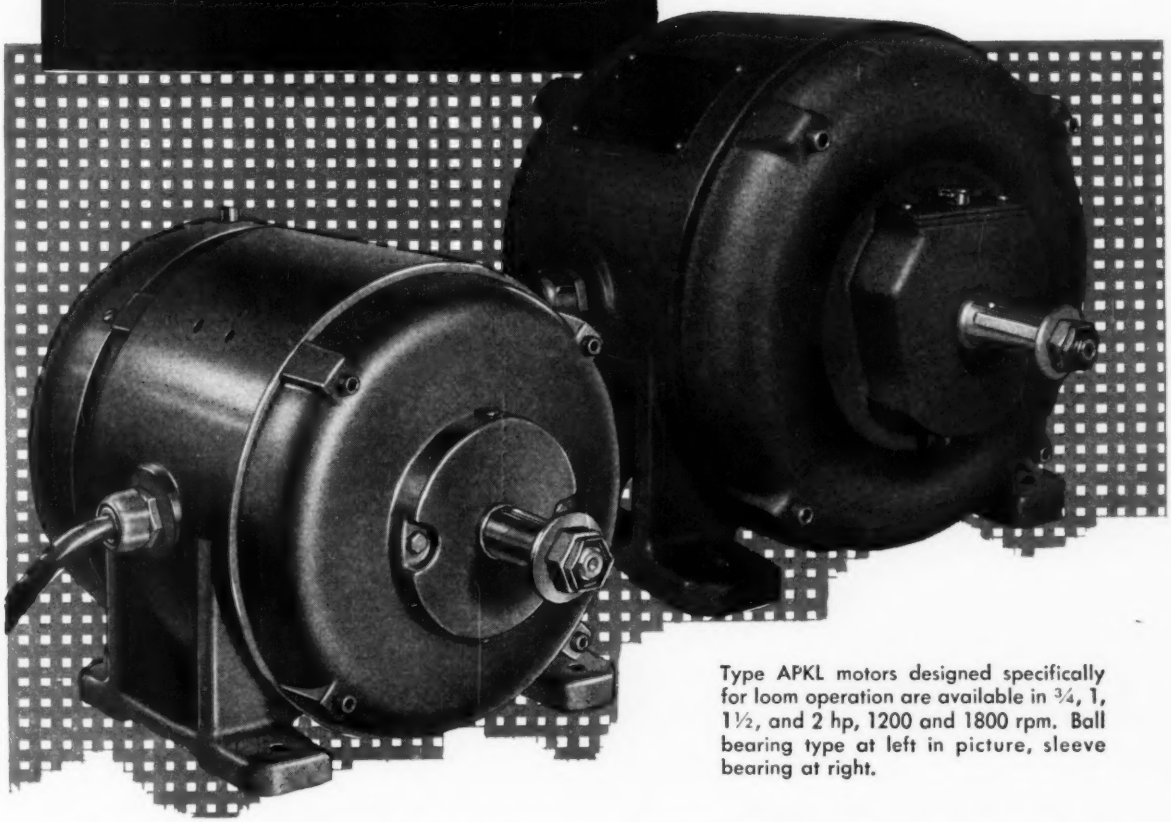
In test runs, fabrics made of the newer synthetics in light, medium, and heavy shades have been dyed in less than 4 hrs., including loading and unloading. Tests have involved fabrics up to 65 ins. wide, 2 to 12 oz. per yd., and level results have been obtained in batches up to 1,000 yds. (the maximum tested). For blends, the synthetic content can be dyed at high temperatures, followed by lower temperatures for cotton and/or rayon content.

BAR RACK AND CREEL are combined in this model of the loading and unloading equipment. Feed rolls on the rack pay out the fabric, which is held in rolls on the creel mandrels. The fabric is unloaded back onto the creel.

Circle T-16 on Reader-Service Card

New Loom Motor

Specially built for high speed loom operation



Type APKL motors designed specifically for loom operation are available in ¾, 1, 1½, and 2 hp, 1200 and 1800 rpm. Ball bearing type at left in picture, sleeve bearing at right.

This entirely new loom motor design is a result of intensive Allis-Chalmers research into the true nature of loom loads at speeds up to 200 picks per minute and more. Several hundred motors of the new design have had more than a year of test in regular mill operations.

Features Proved in Operation

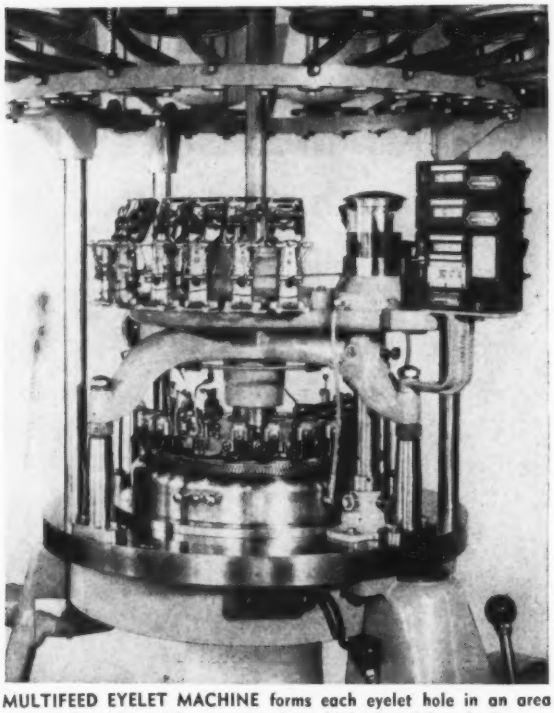
Cast-iron frame is totally enclosed, non-ventilated type that excludes all lint from internal parts, holds bearings in correct alignment and maintains uniform air gap. Feet are machined in a single operation, assuring perfect alignment and easy mounting.

Electrical design is generous. The stator is extra large and of heavy construction to provide electrical capacity and physical strength to meet stresses of rapid load oscillation. The rotor is of largest practical diameter in order to provide optimum flywheel effect (Wk^2). The motor operates at very stable speed under pulsating load conditions. A-4342

Allis-Chalmers loom motors are available with flywheel where required. Get complete information from your nearby A-C district office or write Allis-Chalmers, Milwaukee 1, Wisconsin, for Bulletin 51B7111B.

ALLIS-CHALMERS

Revolving-Cylinder Machines for High-Speed Eyelet Knitting



MULTIFEED EYELET MACHINE forms each eyelet hole in an area three wales wide and four courses deep. Multiples of four feeders are arranged in compact groups.

Two new latch-needle machines (4/RLTM and 4/RLTHM) to make plain and figured-eyelet fabrics have been introduced by Mellor Bromley & Co. Ltd., Leicester, England.

Each eyelet hole is formed in an area three wales wide and four courses deep. The machine collects two consecutive loops in the same sinker wales, expands them, and transfers them together to two adjacent needles. The knitting is done by dial needles, and every third slot in the cylinder has a pair of jacks for collecting and transferring sinker loops; the dial is gear driven. Multiples of four feeders are arranged in compact groups, separated by transfer positions.

All the machines have approximately 16 slots per inch in the cylinder and dial.

The electromatic stop motion combines a yarn-equalizing device in the overhead tackle; a dropper stop motion operates when the yarn breaks. Estimated output when two ends of 35s cotton yarn are fed is about 4 lbs. per feeder per 8-hr. shift.

Features of the 4/RLTM machine include: redesigned bobbin stand of rigid construction, which simplifies threading up; drawing-off rolls covered with oil-resistant rubber composition; large-capacity fabric winder; and a new automatic oiling device.

Eyelet holes can be developed in cross-over or diagonal formation, provided the machine has eight feeders or a multiple of eight feeders.

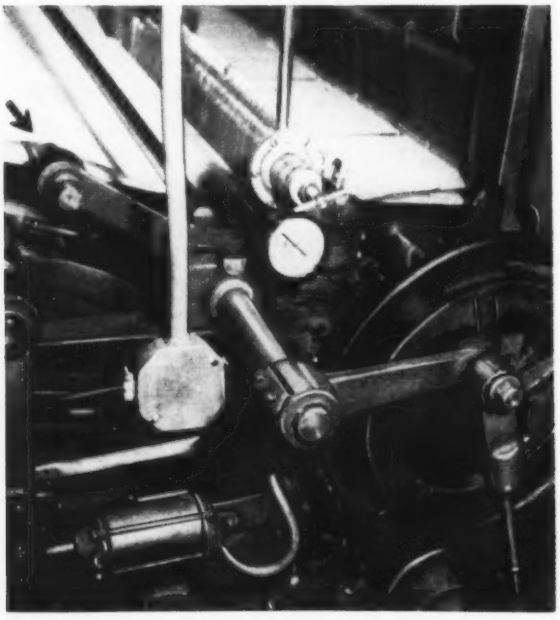
The eyelet unit can be made two wales wide instead of three, or it may contain one transferred sinker loop instead of two.

The 4/RLTHM Model has all the features of the 4/RLTM. On machines with at least 14-in. cylinders, there is also a pattern wheel for each group of feeders. The wheels select jacks to produce figure designs in eyelet units on a foundation of plain knitting.

The size of pattern wheel has been standardized; therefore the design width and the depth per group of feeders are the same for all these machines. The width of the design area is 48 wales (16 units) and the depth per group of feeders is 16 knitted courses (4 units).

Circle T-17 on Reader-Service Card

"Pick Packer" Puts More Picks per Inch in Cloth



A new attachment for packing filling yarns tightly into warp yarns is said to be applicable to all types of looms.

Southern Loom Development Co., 2222 Augusta St., Greenville, S. C., has tested the device on tire-cord fabrics, duck, and other heavy types of goods and claims that filling can be tightly packed into the fabrics with constant control of both crimp and stretch.

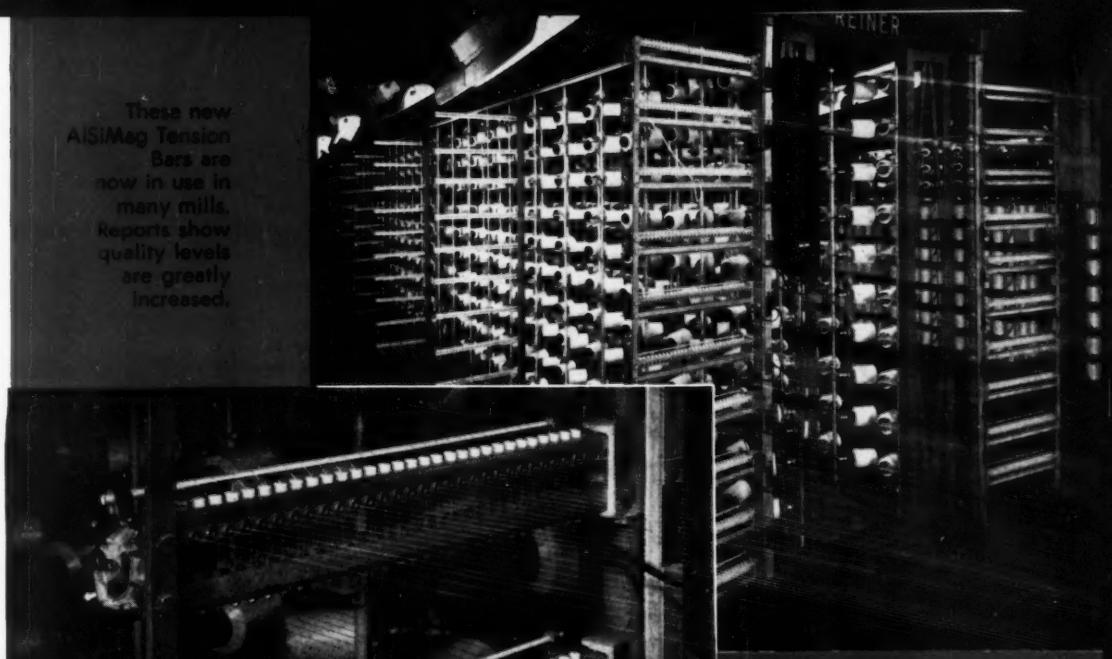
The mechanism consists of a tension rod that passes through alternate ends of the warp yarns between the whiproll of the loom and the drop wires. An arm fastens the tension rod to a pivot rod mounted in a bearing on top of each of the loomsides.

Another arm is keyed to the end of the pivot rod on the lever end of the loom, and this arm is oscillated by a rod-and-head attachment driven from a crank on the camshaft similar to a dobby-drive crank.

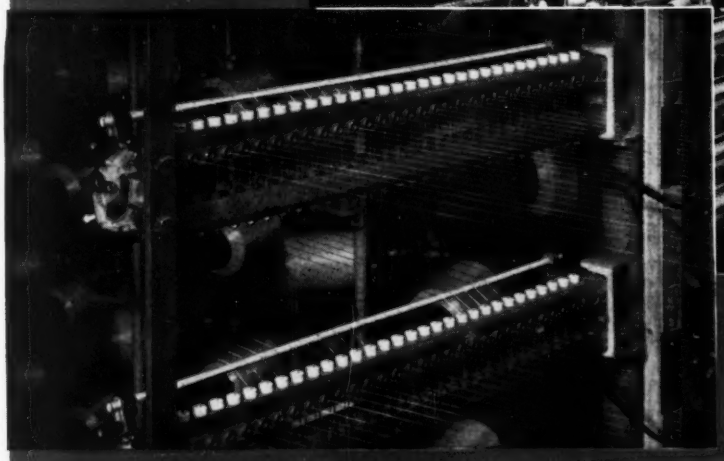
The tension rod moves up and down as the loom runs and is timed to tighten one warp shed and leave the other loose at the beat-up of the cloth. The amount of rod movement can be closely controlled by adjusting a stud.

THE TENSION ROLL in the warp oscillates up and down to tighten one shed of the warp. On the second pick, the other shed is tightened. With the attachment, more picks per inch can be packed into ducks, tire cords, and other heavy fabrics.

Circle T-18 on Reader-Service Card



These new AlSiMag Tension Bars are now in use in many mills. Reports show quality levels are greatly increased.



Photos courtesy of Kingsboro Silk Mills, Inc. McMinnville, Tennessee

New! AlSiMag® GUIDE BARS FOR TRICOT WARPERS

- **extremely hard, long lived**
- **satin finish reduces tension**
- **sizes to fit any make machine**

These new tricot guide bars are made in AlSiMag 513, a super-long-wearing material which has a hardness of 9 on Mohs' scale (diamonds are 10). They are supplied in a uniform satin finish to reduce tension and provide better yarn control. Because of their extreme hardness, the satin finish is maintained indefinitely. Long life without cutting assures damage-free yarn and substantially lowers maintenance costs. These AlSiMag guide bars are easy to install—just slip them into position and tighten securely.

We can supply AlSiMag 513 guide bars for any make of tricot warper. They are available with ½" or ⅝" diameter, in lengths up to 24" to suit your particular requirements.

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TEXTILE *Equipment* NEWS

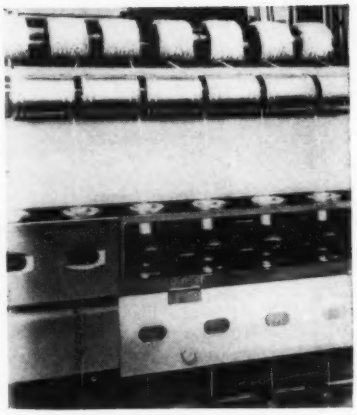
Woolen and Worsted Frames Now Available in U. S.

WORSTED FRAME uses a broad-belt system of high drafting with each belt carrying several ends of sliver or roving. Top rolls, which guide the sliver or roving, can be varied in number, distance, and weight according to the roving and draft.

Circle T-19 on Reader-Service Card

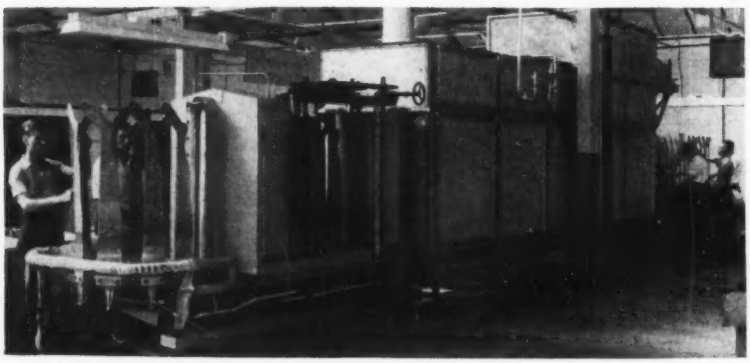
WOOLEN FRAME has porcupine back rolls and a twisting-delivery device instead of front rolls. This arrangement is said to result in larger drafts and more-uniform yarn. The supply packages are accessible without special handling aids.

Circle T-20 on Reader-Service Card



Improved Spinnbau woolen and worsted ring spinning frames are available from American Schiess Corp., Textile Machinery Div., Stamford, Conn. The first installations of these frames will be in the Research Dept., American Viscose Corp., Marcus Hook, Pa. U. S. and Canadian manufacturers can arrange to have sample lots of their own raw materials spun on these machines at the Marcus Hook plant.

Nylon-Hose Machine Eliminates Preloading



CONDITIONING CHAMBER of this new nylon-hose plasticizing machine is electrically heated and uses no live steam. The hourly production can be adjusted up to 40 doz. pairs.

A new type of heat-setting machine, called a plasticizing machine, for finishing nylon hosiery has been introduced by Nylo-Plas Ltd., 87 Regent St., London, England. The machine can be operated by male or female labor to process 40 doz. pairs of stockings per hour.

The machine is constructed on the conveyor-belt principle. Three operators are required. Any time after dyeing, the stockings are placed on upright metal forms and pass through a spray box where water or an antisnag chemical may be applied.

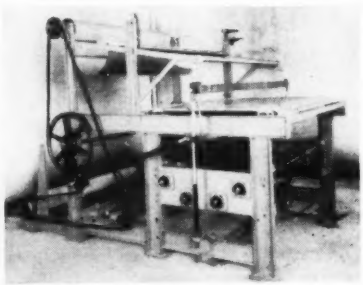
The stockings pass through a pair of rollers and enter the conditioning chamber where the heat setting takes place. The hose are set by electronically controlled heat and humidity. Electricity is used for heating instead of live steam.

After plasticizing, the conveyor belt returns the stockings to the stripping board where the stockings are removed from the forms. The stockings lie flat and are ready for pairing and boxing.

Advantages claimed for the Nylo-Plas machine are: (1) practically no shrinkage takes place during the process; (2) pull threads are reduced to a minimum; (3) half-hose can be handled; (4) stockings made from cotton, silk, Perlon, and other fibers can also be processed; and (5) stockings do not require washing before wearing because of the hygienic spray and roller treatment.

Circle T-21 on Reader-Service Card

Improvements Made On Cloth-Folding Machine



IMPROVED CLOTH-FOLDING MACHINE is said to take up less floor space and to have a greater capacity.

Improvements on the Type 54 cloth-folding machine are said to include a welded-steel construction, increased capacity, less floor space, and reduced maintenance. Made by Curtis & Marble Machine Co., Worcester 3, Mass., the air-operated folder can be supplied with a self-contained air compressor, automatic seam detector with brake motor, and electric yardage counter. Other features are a driven unrolling attachment with a synchronized drive for the feed rolls (a small scray can be used); V-belt drives, including a variable-speed drive with a speed-reduction unit; self-aligning ball joints for crank connections; and an improved blade motion that results in smoother running.

Circle T-22 on Reader-Service Card

VICTAGRAM

LD181EG DL PD

TO THE READERS OF TEXTILE WORLD

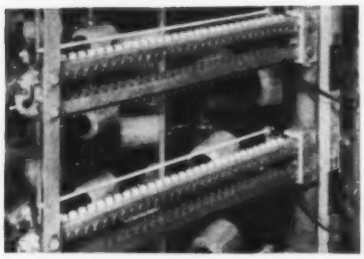
NEW PROCESS JUST ANNOUNCED PERMITS ONE-BATH UNION DYEING OF DACRON-WORSTED PIECE GOODS WITHOUT DANGER OF CARRIER SPOTTING. NEW PROCESS DEVELOPED BY TEXTILE ANILINE AND CHEMICAL COMPANY IN COLLABORATION WITH VICTOR CHEMICAL WORKS. USES DIAMMONIUM PHOSPHATE AS REGENERATING AGENT. ADVANTAGES TO USER ARE SAVINGS IN TIME, ELIMINATION OF CARRIER SPOTTING, INVENTORY REDUCTION, ELIMINATION OF EXCESSIVE SCOURING, INCREASED PERSPIRATION FASTNESS AND RESISTANCE TO "DRY CLEANER" SPOTTING.

DYERS NEED NO LONGER BE TIED TO LARGE INVENTORIES OF FINISHED STOCK-DYED GOODS IN PARTICULAR COLORS. WITH NEW PROCESS, DYERS CAN HOLD DACRON-WORSTED BLENDS IN GREY GOODS FORM AND DYE THEM QUICKLY TO MEET CHANGING SHIFTS IN SHADE POPULARITY. FOR TECHNICAL BULLETIN ON NEW PROCESS, READERS SHOULD WIRE OR WRITE:

VICTOR CHEMICAL WORKS 141 W JACKSON BLVD CHICAGO 4, ILL

1121A

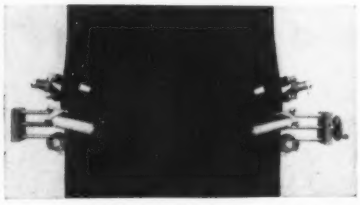
AlSiMag Guide Bars Fit Any Tricot Warper



CERAMIC GUIDE BARS for any make of tricot warper are in production at American Lava Corp., Chattanooga 5, Tenn. Made with AlSiMag 513, the guides have a hardness of 9 on Mohs' scale (diamonds are 10). They are supplied with a satin finish to reduce tension and provide better yarn control, and this finish will last indefinitely. Other advantages: damage-free yarn, low maintenance costs, and simple installation. The guide bars are supplied in lengths to 24 ins. with ¼- or 5/16-in. diameters.

Circle T-23 on Reader-Service Card

Prevent Doubled Selvage



SELVAGE UNCURLERS, made by Mount Hope Machinery Co., Taunton, Mass., are designed to prevent doubled or turned selvages in cloth finishing. The curlers are driven by the cloth, and slackness is taken up by a tension spring. They can be installed at any point where uncurlers are needed and they can be mounted.

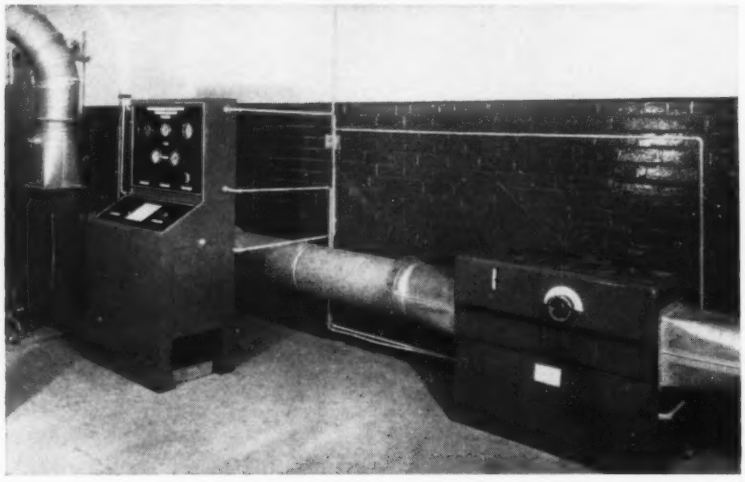
Circle T-24 on Reader-Service Card

Infrared Tubes Put Out 100 Watts per Inch

Infrared lamps for drying ovens that put out 100 watts of heat energy for every inch of tube length have been developed by General Electric's Lamp Div., Nela Park, Cleveland 12, Ohio. The lamps are made with a coiled tungsten filament in fused, translucent-quartz tubes slightly larger than a cigarette, with "lighted lengths" of 5 and 10 ins. Two sizes are now available: 500 watts (115 to 125 v.) and 1,000 watts (230 to 250 v.). Samples are available. Price of the lamp: 500-watt size, $7; 1,000-watt size, $8.50.

Circle T-25 on Reader-Service Card

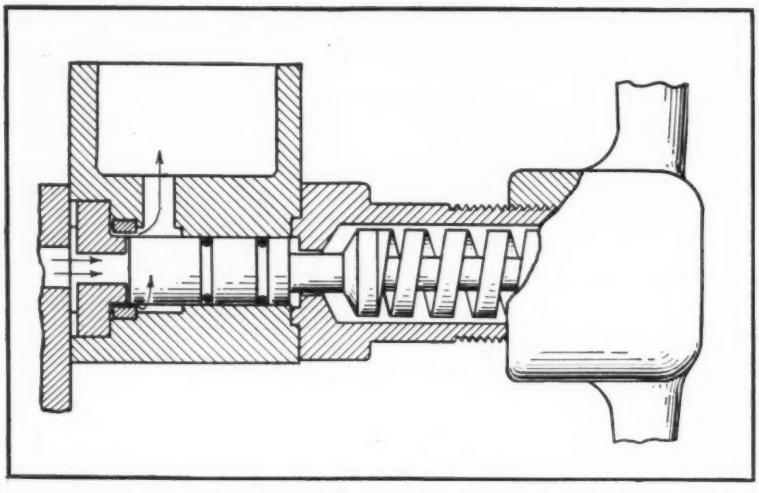
Wool-Oiling System Is Automatically Controlled



AUTOMATIC WOOL-OILING EQUIPMENT has two parts: the Atomist oiler (right) and the control panel (left). Made by Pneumatic Conveyors Ltd., Huddersfield, England, the equipment is said to give complete accuracy of oil delivery; oiling is controlled by the flow of wool stock through the oiler. The oil operates from compressed air, which drives the oil from the storage tank through the control panel to the oiler. The fibers are oiled in a chamber filled with atomized oil. Features are: blends can be processed without long standing, oil can be changed by a turn of a knob, and the unit can be installed almost anywhere in the blending line.

Circle T-26 on Reader-Service Card

Single-Stage Valve for Homogenizing Size



SINGLE-STAGE VALVE is said to reduce homogenizing pressures and horsepower requirements by 25% for most size formulas.

The new single-stage homogenizing valve developed by Manton-Gaulin Mfg. Co., Inc., Everett, Mass., was designed specifically for the textile industry. Extensive tests in textile mills are said to have proved the advantages of this single-stage valve.

The elimination of the pilot prevents pilot breakage or plugging from contamination by foreign matter. The valve is guided from the back and is self-cleaning. With most size formulas, approximately 25% less homogenizing pressure, with a corresponding reduction in horsepower, is required than with the two-stage assembly valves.

The simplified design is said to reduce maintenance costs.

Circle T-27 on Reader-Service Card

Craftsmen *in* **RUBBER**

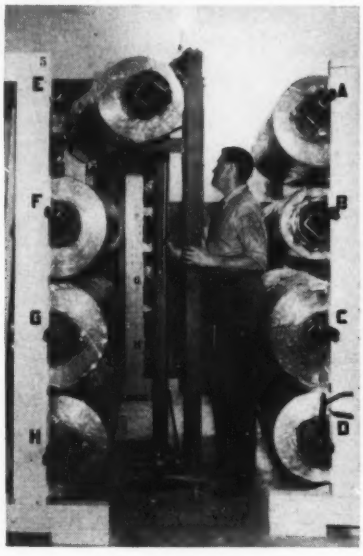
BUILD ***PERFORMANCE***

into **STOWE-WOODWARD**
Rubber Covered Rolls

STOWE-WOODWARD, Inc.
Craftsmen in rubber
NEWTON UPPER FALLS 64, MASSACHUSETTS

Windlass Lift Cart Puts Warp Beam on Loom

STANDARD-MODEL LIFT CART carries up to 22-in. warp beams and has a maximum load of 700 lbs.



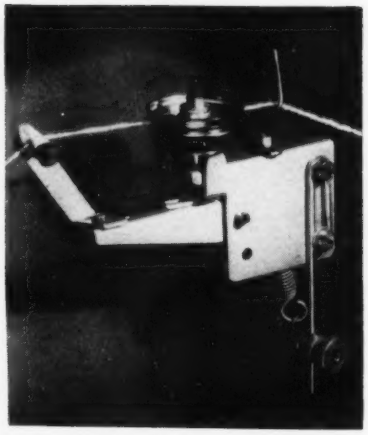
SPECIAL MODEL of the lift cart is available for high lifting. These cloth rolls are wrapped with cellophane.

A lift cart for placing warp beams in looms has been developed by Stenbergs Mekaniska Verkstad, Norrkoeping, Sweden. The lift cart has a strong chassis on casters, with lifting arms that are raised and lowered with a brake-equipped windlass; and the hand crank can be folded in to save space.

Two larger wheels on a center axle can be lowered for faster transportation. Casters are better in close quarters.

Circle T-28 on Reader-Service Card

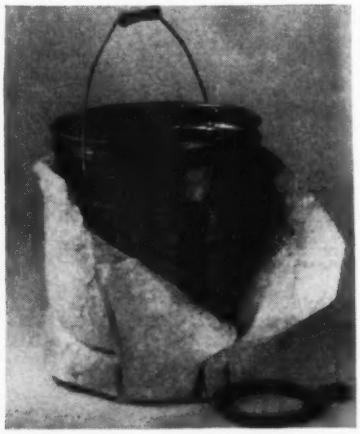
Tension Compensator Works With Any Yarn



YARN-TENSION COMPENSATOR introduced by J. Rawson & Sons Ltd., Tunbridge Wells, England, can be used for any yarn from nylon to jute. The device is a combination of a spring-loaded disk tensioner and a tension-relieving arm. Excess yarn tension pulls down the arm to reduce the pressure applied by the disks. Springs are available for different tension ranges, and the angle of lap can be varied.

Circle T-31 on Reader-Service Card

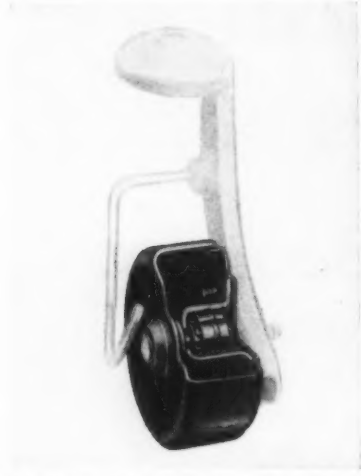
Wrap-Around Heater Gently Heats Chemicals



ELECTRIC HEATER wraps around a 5-gal. drum to heat dyes and chemicals that might be damaged by overheating. Made by Pre-Fab Heater Co., Guilford, Conn., the heater applies heat uniformly around the drum. A blanket of fibrous glass can be used to increase heating speed. Heaters of various capacities are available for a wide range of applications.

Circle T-32 on Reader-Service Card

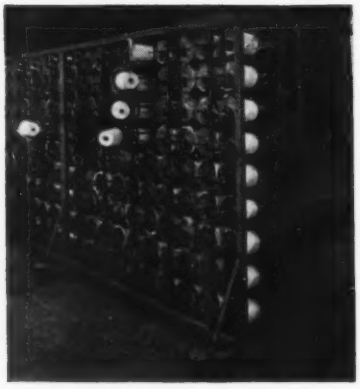
Ball-Bearing Tape Pulley Rotates on Inner Race



TILTPROOF TAPE-TENSION PULLEY for spinning frames is made with double-row ball bearings and a dynamically balanced Parkerized shell. Made by SKF Industries, Inc., Box 6731, Philadelphia 32, Pa., the pulley is said to have an increased capacity because of the inner-race rotation and stationary grease chamber.

Circle T-29 on Reader-Service Card

Dutch Warper Creel Built for Synthetic Yarns



A WARPING CREEL for rayon, nylon, and crepe yarns is available from N. V. Machinefabrick L. te Strake, Deurne, Holland. It is available as a jack or magazine creel. Coupled sections are on casters so they can be regrouped or shifted to other warpers. The spindle can be withdrawn horizontally from the creel, and this feature saves space. Yarn guides can be supplied on the inside or outside of the creel. The tensioning device holds yarn tension within 1/7 oz. variation at warping speeds of 110 to 875 yds. per min.

Circle T-30 on Reader-Service Card

TEXTILE *Equipment* NEWS
CONTINUED ON PAGE 196

VERTEX FLAKES • 557 FLAKES
WHITE RIBBON FLAKES • WOOL FLAKES

Call Swift for SOAPS

Another of Swift's Products for Industry

● With a reputation for producing fine woolens since 1915, The Bell Company of Worcester, Massachusetts, is very particular about the quality of soaps used in their scouring facilities. Yes — Swift's Vertex Flakes, really treat woolens right. Made from the highest grade distilled red oil, Vertex Flakes quickly and gently remove oils and greases picked up in spinning or weaving operations. Because of their low titer (8-12°C), Vertex Flakes dissolve out troublesome contaminants quickly — even at low water temperatures. Swift's Vertex Flakes are highly recommended and widely used wherever fine dyeing calls for complete, yet gentle scouring.

The Bell Company is another of the many leading textile firms that specify Swift's soap for their scouring needs. They know that the name Swift in soap is backed by years of specialized experience and that Swift's soap products are readily available from 375 locations throughout the U. S. and Canada.

Yes, there is a Swift's Soap for your textile needs and a Swift's distributor near you . . . so, the next time you need soap — Call Swift for service and dependability.

ONE TRIAL IS BETTER THAN A THOUSAND CLAIMS

SWIFT & COMPANY
Industrial Soap Department
U.S. Yards · Chicago 9, Illinois

NEW *Dyes* AND *Chemicals*

Anionic Surfactant For Finishing

Triton AS-35 is a new addition to the line of surfactants of Rohm & Haas Co., Philadelphia, Pa. According to the producer, it is characterized by high foam, excellent detergency, good wetting, and good level-dyeing properties. It is stable to acids and alkalis under conditions common to textile operations. The agent, an anionic material, is recommended for use in kier boiling cotton goods, peroxide and chlorine bleaching, and scouring rayon fabrics. It also may be used as a wool-stock or piece-goods detergent and as a penetrant to assist in level dyeing with acid dyes, direct dyes, and acetate dyes.

Circle D-1 on Reader-Service Card

Acid Dye for Wool

A new nondusting acid dye, National Fast Wool Yellow GL, that produces bright clear shades of yellow on wool has been announced by National Aniline Div., Allied Chemical & Dye Corp., New York, N. Y. The dye is suitable, it is said, for coloring flannels, women's dress goods, and knitting yarns. It is especially recommended for dyeing wool and fur felt hats because of its good penetrating, leveling, and fastness qualities. It can also be used for discharge printing. According to the producer, the dye has excellent fastness to light, steaming, hot pressing, alkalis, hot water, and crocking.

Circle D-2 on Reader-Service Card

Azoic Dye for Cotton and Rayon

National Naccogene Blue DGN Powder is another addition to the line of stabilized azoic dyes of National Aniline Div., Allied Chemical & Dye Corp., New York, N. Y. When printed in low concentrations on cotton and rayon, it produces subdued shades of blue; and in high concentrations, it produces full bloomy navies. The product has good printing-paste stability, it is said, and can be printed along with leuco vat ester dyes. Together with excellent fastness to washing, perspiration, and sea water, it is said to have very good fastness to boiling soap and boiling soda and good to fair fastness to hot processing, rubbing, and light.

Circle D-3 on Reader-Service Card

Acid Dye for Red and Blue Shades

Sandoz Chemical Works, Inc., New York, N. Y., announces the development of Xylene Fast Bordeaux P, a recent addition to the line of "P" colors. This dye has a similar rate of dyeing and exhaustion as the other members of the series, and is reported to have the same good fastness properties. The dye has a rich bluish tone that, when combined with other Xylene Fast "P" colors, produces a wide range of red and wine shades. Like other colors in the group, it is best applied in a pH range from 5.5 to 5.8.

Circle D-4 on Reader-Service Card

New Dyes for Wool, Nylon, and Silk

Sandoz Chemical Works, Inc., New York, N. Y., announces the development of Lanasyn Brown RL Pat. and Lanasyn Gray BL, two of a new series of dyes developed for wool, nylon, and silk. The Lanasyn colors may be combined with chrome dyes for metachrome, topchrome, or chrome mordant work. One advantage of the Lanasyn colors is the possibility of obtaining better duplication of shade from batch to batch than with certain chrome colors that are often affected by everchanging amounts of iron in the water and steam, and variation in the degree of chroming. The Lanasyn colors, it is said, have the fastness properties required for men's-wear fabrics.

Lanasyn Gray BL, originally produced under the name of Sulfonine Gray BWL, is reported to have fastness properties practically equal to most chrome dyes. Because of its high lightfastness, it is said, Lanasyn Gray BL is suited for combination with the very fast Alizarine milling colors for dyeing yarn, top, stock, or piece goods.

Circle D-5 on Reader-Service Card

Improved Red Milling Dye

Sandoz Chemical Works, Inc., New York, N. Y., announces the development of Sulfonine Scarlet GWL, a new color in the milling group, reported to surpass Sulfonine reds in fastness to washing, fulling, light, and stoving. It is recommended by the producer for dyeing chlorinated top or coloring yarns for washable knitted materials. Because of its fastness to stoving, it is valuable in the dyeing of blankets.

Circle D-6 on Reader-Service Card

Red Dye for Dacron, Orlon, Nylon, and Acetate

Celanthrene Cerise B, a disperse dye produced by E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., produces bright shades of pink on Dacron, Orlon, and acetate. On nylon, the color yields bluish-pink shades. This dye, it is said, has good level-dyeing, build-up, and fastness properties.

Celanthrene Cerise B may be applied to Dacron from benzoic acid or phenolic carrier baths, by pressure dyeing without a carrier, or by the Thermosol process.

Circle D-7 on Reader-Service Card

New Fatty Acids

Emery Industries, Inc., Cincinnati, Ohio, announces the commercial availability of three new, low-cost, structurally modified fatty acids. Known as 994-R, 995-R, and 996-R, these acids, it is said, possess the color and heat stability associated with high-quality stearic and palmitic acids but have the consistency and solubility characteristics of distilled tallow fatty acids.

In 16% real soap concentrations at room temperature, solutions are clear and completely fluid, whereas potash soaps of stearic acid are semisolid in concentrations as low as 1%. According to the producer, these fatty acids show promise as textile softeners.

Circle D-8 on Reader-Service Card

Durable Water Repellent

Hart Products Corp., New York, N. Y., announces the development of Hartuwet S, a durable water-repellent finish for rayon blends, cotton, nylon, acetate, wool, Dacron, and Orlon. This finish, a stable silicone emulsion, is said to improve abrasion resistance, tear strength, sewability, crease recovery, and spot and stain resistance and to impart a crisp, resilient hand.

Hartuwet S may be applied by the usual padding equipment and cured on the tenter frame or loop dryer.

Circle D-9 on Reader-Service Card

Nonionic Detergent, Dyeing Assistant

Zimmerman Associates, Guilford College, N. C., announces the development of Zalon, a new nonionic detergent. Zalon, it is said, provides textile materials with a very soft hand. This finish may also be used as a wetting agent and dyeing assistant in all dyeing operations.

Circle D-10 on Reader-Service Card

Basic Colors for Type 42 Orlon

E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., has announced the development of three basic dyes especially adapted for use with Type 42 Orlon.

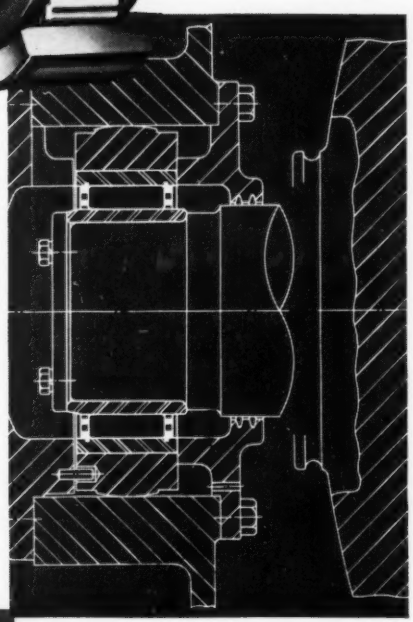
Du Pont Basic Yellow OL produces brilliant, greenish-yellow shades on Type 42 Orlon. It will withstand 40 hrs. Fade-Ometer exposure, it is said, and generally shows good fastness to wet processing. When the dye is used on Orlon-wool blends, the Orlon is dyed and the wool left white. The dye shows very little staining of cotton and rayon in blends with Orlon and has poor affinity for nylon, Acrilan, and Dynel.

Du Pont Basic Red 4G produces bril-

Is shaft expansion a problem?

HERE'S HOW HYATTS HELP...

Hyatt Hy-Loads are available in separable outer race, separable inner race or non-separable construction.



Check the drawing at the left. The bearing is a Hyatt Hy-Load, and because the inner race is cylindrical, the shaft it supports is free to move axially—thus allowing for shaft expansion without cramping the bearing or distorting the shaft. Obviously, this is only one of many ways in which Hyatt bearings can be used to reduce costs as they reduce friction, but it's a good example of why so many designers throughout industry keep their Hyatt catalogs within easy reach.

For further details write for Catalog 150 or call your nearest Hyatt representative.

HYATT ROLLER BEARINGS

STRAIGHT BARREL TAPER

HYATT BEARINGS DIVISION • GENERAL MOTORS CORPORATION • HARRISON, NEW JERSEY

liant, fluorescent shades of scarlet on Type 42 Orlon. This product has good lightfastness and shows no break until exposed in the Fade-Ometer for 40 hrs. There is a slight tendency toward blueness after a few hours's exposure, but after heating and further exposure the shade returns. Du Pont Basic Red 4G, it is said, has good wetfastness properties and is recommended in union dyeing Orlon and wool, where it will not stain the wool. In Orlon-rayon blends, only a slight staining of the rayon component is evident. The dye possesses good affinity for acetate and silk, where its fastness properties are similar to those on Orlon.

Du Pont Basic Blue OB produces reddish-blue shades having good lightfastness on Type 42 Orlon. It also has good wetfastness, it is said, and good level-dyeing properties. When used in unions of Orlon and wool, it leaves the wool white; and in blends of Orlon and rayon, the rayon is stained very slightly. Du Pont Basic Blue OB has little affinity for acetate and nylon and will produce medium-blue shades on silk.

Circle D-11 on Reader-Service Card

Durable Antistatic Agent For Fabrics

Zelec DX, a new durable antistatic agent that minimizes static electricity during finishing operations, particularly on synthetics, is produced by E. I. du Pont de Nemours & Co., Inc., Wilmington, Del. It reduces dust and lint settlement, it is said, and helps keep the fabric from being electrically attracted to parts of processing equipment. Zelec DX resists removal by soap and water, the producer states, and will not cause discoloration of fabrics during storage.

Circle D-12 on Reader-Service Card

Green-Blue Dye For Wool, Nylon, and Silk

A new dyestuff known as Brilliant Alizarine Fast Blue G, developed by Ciba Co., Inc., New York, N. Y., produces bright, greenish-blue shades with good lightfastness on wool, nylon, and silk.

It can be applied on wool and silk in a weak acid bath or neutral dyebath and on nylon in an acetic-acid dyebath.

The dye is stable to chrome and is not affected by prolonged boiling.

It dyes wool and nylon noticeably brighter and greener than does Alizarine Sapphire Blue 2G and somewhat duller than Brilliant Alizarine Fast Blue B, and it has better neutral dyeing properties than either.

It is recommended for dyeing piece goods, knitting yarns, silk, and nylon.

Circle D-13 on Reader-Service Card

Resin-Fast Dyes for Cotton and Viscose

Two new colors have been added to the line of resin-fast dyes of American Cyanamid Co., Bound Brook, N. J. Both dyes, Calcodur Resin Fast Gray 2G and Calcodur Resin Fast Gray B, have been developed especially for dyeing viscose or cotton fabrics finished with durable resins.

The Fast Gray 2G produces a green-gray color. The Fast Gray B dyes fabrics to a full blue-gray shade.

Circle D-14 on Reader-Service Card

Union Dye Your Dacron-Wool Blends in a One-Step Process

One-step union dyeing of Dacron-wool blends has been announced by Victor Chemical Works, New York, N. Y., in collaboration with Textile Aniline & Chemical Co., Lawrence, Mass. Based on the use of diammonium phosphate as a regenerating agent, this process is now employed by a number of mills because of its economy and effectiveness.

Several acetate dyestuffs, used with a carrier, can be used to dye the Dacron. The carrier, either ortho-phenyl-phenol or para-phenyl-phenol, acts as a swelling agent on Dacron and is applied in a water phase after having been made soluble by being converted to a sodium salt. However, in order to function as a wetting agent, the sodium salt must be regenerated to the original ortho-phenyl-phenol or para-phenyl-phenol. DAP (diammonium phosphate) precipitates the sodium salt of ortho-phenyl-phenol at a pH of around 8.9 to 9.0. After the bath has been boiled, the pH is decreased to 7.6 for dyeing the wool component of the blend.

(The earlier union-dyeing technique consists of a two-bath process. Acidification with acetic acid causes a milky precipitate and a fairly stable emulsion that is readily picked up by Dacron. However, the acetic acid causes a pH lower than 7.0 that necessitates thorough scouring and neutralization of the fabric before the wool can be dyed.)

Advantages Cited for DAP Process

Advantages claimed from dyeing Dacron-wool blends in a dyebath with a pH above 7.0 are:

1. Time saving; a one-bath process results in a dyeing cycle of 5½ to 6 hrs.
2. Elimination of carrier spotting; less redyeing
3. Elimination of excessive scouring to remove ortho-phenyl-phenol from the fabric
4. Increase of fastness to perspiration
5. Increase of resistance to sublimation and to dry-cleaner spotting

Since the quality of the dyeing and the ultimate fastness of the dye depend on the materials used, the acetate dyes and wool dyes should be carefully selected.

Practical Method for Union Dyeing Fabric

1. Wet out fabrics for 20 mins. at room temperature with approximately 15% DAP.
2. Add slowly 15% of the carrier dissolved in cold water, and raise the temperature of the dyebath to 140° F. within 10 mins.
3. Lower the temperature to 100° F. and add the acetate and wool dyestuffs that have been previously dissolved; boil from 1 to 1½ hrs.
4. Scour the goods thoroughly with a synthetic detergent and soda ash.

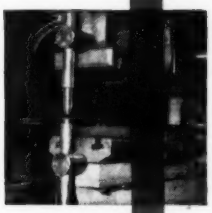
It is advisable that for experimental purposes the method be split into two parts. In this way, the exhausting action of the acetate dyestuff onto the Dacron may be observed. After a moderate amount of experience, the one-bath method, as outlined above, may be used.

New Acetate-Dyeing Technique

The F. P. Maupai Dyeing Co. Inc., West New York, N. J., has announced the development of a new dyeing technique for acetate.

The technique imparts gas- and lightfastness to acetate that, in some instances, is said to compare favorably with dope-dyed acetate products.

According to reports, the new process produces a color with twice the fastness to gas and three times the fastness to light as ordinary acetate dyeing techniques produce with 3% gas inhibitors added. The new acetate-dyeing process makes use of Eastman gasfast and lightfast dyes of the GLF series.



High resistance to corrosion

The entire Tru-Shade Dye Beck is stainless steel; the tub of Type 316 stainless steel. No carbon steel is welded to the stainless steel in any part of the construction. Ribs are spot-welded to inhibit corrosion of the metal. The welds are strong: each one is tested individually for 4000 pounds tear strength.

Quality from the Mill . . .

New high-efficiency motor drive

The motor drive shaft, mounted on stainless steel supports, is directly in line with the reel; chain whip is eliminated, power transfer more efficient. Stainless steel ribs directly support motor bearings.

Special features

The Rodney Hunt dye beck is designed for easy cleaning . . . even in corners. The patented, girder-construction reel has a rigid shaft to withstand cloth surging. Doors are reinforced with horizontal ribs to prevent distortion. One-piece window frames prevent leakage. One-piece house top gives high strength . . . makes cleaning easy.

Profit from the Machine!

How can the finisher get the *quality* he's aiming for . . . the *profit* he must have . . . and the *assurance* that his equipment will handle a wide range of fabrics over a long span of years? Rodney Hunt designers take these questions as specifications! . . . so Rodney Hunt TRU-SHADE® Dye Kettles are designed to give efficient low-cost operation and maintenance, assure mill flexibility and long life . . . designed to meet *your* demand for quality and *everyone's* need for profit. For detailed literature write to RODNEY HUNT MACHINE CO., 66 Mill Street, Orange, Massachusetts, U.S.A.

RODNEY HUNT®

Manufacturing Engineers Since 1840

TEXTILE MACHINERY DIVISION

THIS IS NO. 104 OF A SERIES ON

GETTING THE MOST FROM TWISTING

Information about twisting designed to show improvements in twisting equipment and new ideas in the twisting operation

NEW RING RAIL COUNTERBALANCE FOR MODEL 10 RING TWISTER

A smooth ring rail motion is an important element in the production of good ring twister packages.

Ring rail inertia can result in jerkiness or hesitations in the ring rail. It can also cause ridges to appear on the finished bobbins. The ridges not only spoil the appearance of the bobbin, but what is more important, may cause sloughing.

Counterbalancing the ring rail eliminates ring rail inertia and its effects.

A new ring rail counterbalance has recently been made standard equipment on the Model 10 Ring Twister. This new counterbalance gives a smoother ring rail motion even at high traverse speeds.

The new counterbalance consists of a series of extension springs, each attached to the lifter bar at one end and to a midstand connection at the other (fig. 1). The number of springs used on any one Model 10 Ring Twister Frame depends on the spindle spacing, ring size and the number of spindles.

The springs can be attached at any one of nine different points on the midstand connection to obtain the required degree of counterbalance. However, the particular point where they are attached is determined before the machines leave our plant and our servicemen set the springs in this predetermined location when they erect the Model 10 in a mill. This setting should not be disturbed, for no further adjustment is required.

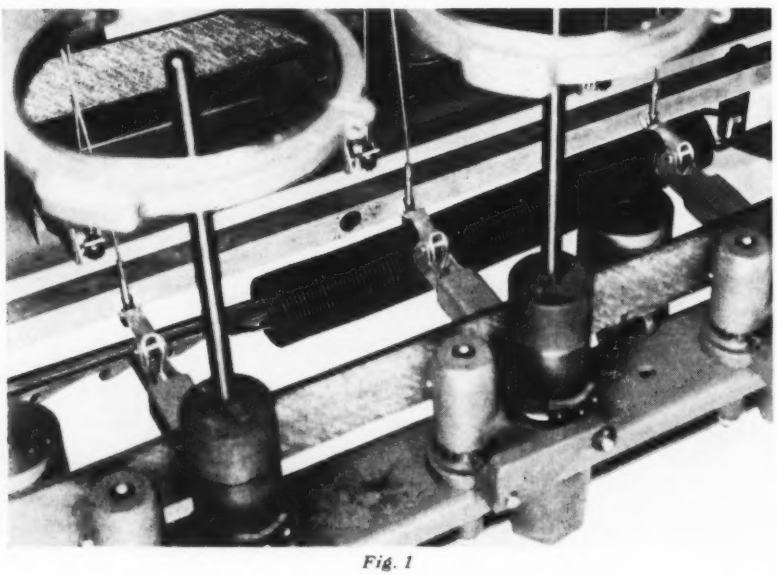


Fig. 1

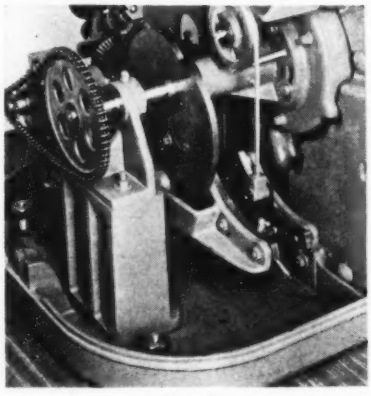


Fig. 2

A new light weight lifter bar and ring rail together with tubular lifter rods are used in conjunction with the new counterbalance springs.

The builder motion has also been improved. An outer support (fig. 2) has been added. The support gives the builder motion greater stability. Together with the new counterbalance, this also aids in providing a smoother ring rail motion especially at high traverse speeds.

These improvements, standard on new Model 10 Ring Twisters, can also be applied to older Model 10s now in use.

May 1954 — 23.3.7

WINDING AND TWISTING MACHINERY FOR NATURAL AND SYNTHETIC YARNS

UNIVERSAL WINDING COMPANY

LEESONA®

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA LOS ANGELES MONTREAL and HAMILTON

LETTERS FROM READERS

Round Table

What's on your mind?

We welcome your comments. Whether you agree or disagree, with us or anybody else, we will be glad to have you air your views.

Unless you ask us not to, we will use your name and company connection when your letter is printed. If you prefer to have your opinions appear unsigned, we will respect your confidence by using only a set of initials.

Write to Editor, *Round Table*, TEXTILE WORLD
330 W. 42nd St., New York 36, N. Y.

DYE-TUBE PIONEER

Dear Editor:

In regard to the answer about package dyeing appearing on page 151 of the January TEXTILE WORLD, may I comment as follows:

Uniformity in winding can be attained only by having all the tensions of a winder alike. This point should be stressed. Firmness of the package should be dependent upon the kind of yarn and its affinity for the dye.

I made the first $\frac{3}{8}$-in. tubes so we could put more yarn in the compartments of the Cohen dye machine. A cut of the winder was shown in my article "How a Bedspring Plus an Idea Became a Dye Tube," which appeared in TEXTILE WORLD of Jan. 17, 1931. The other cut in that article shows the original package with a $\frac{5}{8}$-in. tube, which is in the Smithsonian Institution. Also, the cut shows a $1\frac{5}{8}$-in. tube. The photograph used for this cut was made prior to 1914, and I think the large tubes were used when the Franklin Process was developed. . .

The recently developed transfer device permits winding on plain tubes, which are less expensive than the perforated. The change from flattened round wire is not only less expensive but also offers larger openings for the flow of dye. I think the first tubes I made were from $\frac{1}{8}$-in. wire. It is possible that a smaller, stainless-steel wire, which we did not have in 1906, would be found better.

WALTER A. SIMOND
Essex Junction, Vt.

EXCHANGE STUDENTS

Dear Editor:

A German textile-school graduate with several years of practical experience would like to come to the United States to work in a spinning mill, preferably one with a combing department, for at least six months. An equal opportunity would be available for an American student in one of Germany's leading spinning mills with 175,000 spindles. Correspondence should be addressed to:

GERHARDT WUNNERLICH
Meistersingerstr. 11a
Stuttgart-Degerloch
Germany

"WHAT IS TRUTH?"

Dear Editor:

In the March, 1954, issue of TEXTILE WORLD, you have an article entitled "We Could Tell the Truth." After reading this article very carefully, I was reminded of the question put to Christ by Pilate: "What is truth?"

. . . What are the figures, and how do they compare with larger industries? Our check shows that the textile industry is making approximately 2.94% net profit. What figures did you get, and do you consider this a large profit? Why don't you publish these figures beside those of heavy chemicals, steel, automobile, and other large industries?

JAMES M. MYERS
Salisbury, N. C.

[*The editorial in question was not comparing the textile industry with other industries or even speaking of the textile industry as a whole. It was commenting only on the experience of several individual companies in* 1953.—EDITOR]

TEXTILE TICKLES . . . . . *By Edgar Allen, Jr.*

"Hold it, Buster. Save your oil for the Purchasing Agent!"

Round Table (Continued)

THE OVERSEER AND QUALITY

Dear Editor:

A quality-control department can be a useful tool of the spinning overseer, but the moment he expects quality to be controlled by quality-control men, it becomes worse than useless. The quality-control department alone can no more control quality than a screw driver can drive screws. Like a screw driver, its usefulness depends on the motive power applied to it.

In the spinning room, the person with the greatest potential motive power is the overseer. He is responsible for everything that takes place in his department—good, bad, or indifferent.

N. H. Pomfret

Hamilton, Ont.

JAPANESE SPINNING

Dear Editor:

The writer of this letter remembers that it was not so long after the war that you gave us a copy of your magazine. To tell the truth, the magazine acted as a good restorative to our company, which was then in straitened circumstances. The issue in fact was filled with articles enough to encourage our business and industrial spirits. . .

According to the present spinning trend in Japan, the 6-in. lift to 7-in. ones are becoming more popular than 5- to 5½-in. lifts. During the period from 1918, when our company was inaugurated, up to 1945, the demand was limited to only 5 ins. to 5½ ins. The roller-bearing spindles are still favorably commented upon among the spinners today; and such a tendency has become more and more marked, especially since 1945.

Yasuo Haeno

Amagasaki, Japan

CORRECT ADDRESS

Dear Editor:

We have noticed that the address of our parent company, Rieter & Co., is incorrect in the Classified List of Products and Services in your Mid-November Buyers' Guide and Reference Data Issue.

We shall appreciate your calling your readers' attention to the fact that the correct address of Rieter & Co. is Winterthur, Switzerland.

American Rieter Co., Inc.

Arlington, N. J.

Keep Your Socks Up

Esquire Socks, working with United Elastic Corp., has made a sock that it claims will stay up forever. An Anchorlastic web attached to the sock top is claimed to give twice the traction with only half the tension of ordinary elastic.

Questions AND Answers

Machines Unravel Knitted Fabric

Technical Editor:

Can I unravel expensive yarns knitted on a four-feed circular machine? (9782)

Machines are made to unravel knitted fabrics from circular knitting machines with up to eight feeds. The machines are winding machines with eight spindles and a mechanism for carrying the fabric to be unwound.

The fabric tube is stretched over a conical drum. The ends of the fabric are passed through compensating wires, tension disks, stop-motion levers, and yarn guides to the yarn bobbins.

The drum is rotated by bevel gearing, and a wheel and disk drive from the winding unit to wind the yarn at a speed relative to the drum. The machine can run at 60 rpm.

Glass Fibers Can Be Knitted

Technical Editor:

Can glass-fiber yarns be knitted on circular machines? (9777)

Yes. Sinker-top latch-needle machines have successfully knitted glass-fiber yarns. Sharp angles during the passage of the yarn from the cone to the needles must be reduced to a minimum, and tension on the yarn should be light and uniform.

Nylon-Yarn Oils Must Have Low Acidity

Technical Editor:

What are the requirements for an oil used on nylon yarn for tricot? (9774)

The essential requirements of a textile oil for nylon are: (1) it should be chemically stable, of low acidity, and easily removable under normal scouring conditions; (2) it will not discolor the yarn or degrade it on exposure; and (3) it will possess adequate lubricating qualities.

Vegetable oils are widely used in the textile industry because they meet most of the above requirements and have a low cost. However, the oils should be of the nondrying type with an iodine value preferably below 95 and an acid number of less than 5. The low iodine value shows that the oil has little tendency to harden or become gummy and in conjunction with low acid value shows good chemical stability.

Oils of poor chemical stability are hard to remove. They become rancid and discolor yarn after short periods of storage.

Such a characteristic as viscosity is a matter of choice. Some coners cannot produce a good package with oil of too low a viscosity due to overthrown ends. Oils of extreme slipperiness are objectionable for the same reason.

White mineral oils by themselves have not been generally used on nylon, partly because sized yarn with this type of oil indicated higher wear when compared with vegetable oils. Mixtures of mineral and vegetable oils have been found satisfactory.

Sized and oiled yarns give much wider tension variations than sized and unoiled yarns, possibly because of uneven application of the oil. This variation might also be due to unevenness of size application that causes uneven oil take-up.

However, oiled yarn cuts down on size deposit and helps hold filaments together. The use of coning oil as well as the type of coning oil is a matter of choice.

Crabbing Depends Upon Dye Fastness

Technical Editor:

What is good mill practice for crabbing all-wool men's worsted suiting? How long is the cloth boiled in each of the water baths, and how long is it steamed? (9781)

The boiling and steaming times are determined by the structure of the cloth and the fastness of the dyes. If the dyes are fast and the cloth needs thorough setting, two boilings of 2 mins. each, followed by two steaming periods of 6 mins. each with steam at 30 psi., would give a good set.

If the dyes are not fast to boiling, the temperature of the first two treatments should be as high as is practical, and the steaming should be omitted. Some finishers, however, recommend an initial steaming. This method is claimed to fix some dyes and is usually followed by a wet treatment.

Cotton Filter Cloths Used In Petroleum Filtration

Technical Editor:

What are cotton filter cloths used for, and what are the common constructions? (9778)

Cotton filter cloths may be used in the filtration of dilute alkaline liquors and, in some cases, for filtrating dilute acid liquors. Where the liquor has a deteriorating effect on the cotton cloth, the cloth can be treated to make it more chemical resistant; but since synthetic filter cloths have been used in the chemical industry, this practice is seldom used.

An example of using cotton filters is in the filtration of wax from petroleum. The filter consists of filter blankets (4 or 5 cloths) that are assembled in a press to form the units through which the liquid is forced. These cloths are 10-oz.-per-sq.-yd. ducks with a balanced weave of 11 ends and 11 picks, with six-ply yarns in both the warp and filling.

Another construction is duck weighing 30 oz. per linear yard based on a 22-in. width, with 22 ends and 13 picks. Other cotton filter cloths are: (1) reversible twills with 66 warp ends and 51 picks, made of 12/2 yarn and weighing 11 oz., (2) a twill of 72 warp yarns and 36 picks, made of 18/3 yarn; and (3) a 12-oz. broken twill (chain cloth) that is woven two up-two down, with 64 warp ends and 36 picks from 16/2 warp yarn and 10/2 filling yarn.

Cotton Tricot Shows High End Breakage

Technical Editor:

Can cotton be successfully knitted on tricot machines? (9773)

Tests have been conducted at N. C. State College and Texas Technical College to determine the success of cotton yarn on tricot machines.

Here are the results from N. C. State: The end breakage was high (16 per 100 racks) compared with rayon yarns. The yarn knitted was 70s made of 1 3/32-in. Mississippi Delta cotton. The amount of twist required to give the least end breakages was 29 turns per inch. The speed of the machine seemed to have little effect on ends down. The machine was run from 180 to 400 courses per minute with little change in end breakages.

Mercerization did not improve the running qualities of the cotton yarn, and no improvements were seen after waxing the yarn. Fewer end breakages were noticed when sley points were used.

Singeing did not improve knitting quality, but a smaller amount of lint was noticed on the needle bars.

The addition of size and lubricants to the yarn resulted in increased efficiency. The best results were obtained with a 1% solution of high-viscosity polyvinyl-alcohol adhesive with an added 1% polymerized styrene-base resin.

An 84-in. Whitin 28-gauge machine was used for the tests, and only jersey constructions were made with 8½-in. quality fabric with a ratio of 4 to 3.

The tests in Texas were conducted with carded-cotton yarns on 21-gauge and 28-gauge machines with single yarns from 20s to 60s. Mercerized 60/2 and 80/2 were run on the 28-gauge machine.

The best results were obtained from the mercerized ply yarns. All the yarns were treated with a surfactant in a 1 to 3% concentration.

Many stitch constructions were made, but the experiments were carried out on a 21-in. sample machine; so no ends-down statistics were made.

Change in Doffer Diameter Requires Draft Change

Technical Editor:

We've gone from a 36- to a 48-in.-dia. doffer on our finisher cards. What can we do about the wrinkles we are getting? (9780)

Change the draft to straighten out the wrinkles.

You should be getting about a third more production with the larger doffer because of the greater contact.

Medium Wool and Shoddy Need 4-to-1 Water to Oil

Technical Editor:

What percentages of oil and water are best for these blends of wool: (1) 75% medium wool, 25% worsted picked shoddy; (2) 60% Texas wool, 40% worsted noils; (3) 50% coarse 40s wool, 35% worsted picked shoddy, 15% garnetted nylon? (9779)

For Blends 1 and 2, use water to oil in a 4-to-1 ratio. Put on about 16% emulsion by the weight of stock.

In Blend 3, the nylon doesn't take the oil; so give the 40s wool and the shoddy three pickings with about 12% emulsion, mixed water to oil in a 6-to-1 ratio.

Here's a Formula for Selecting Ring Travelers

Technical Editor:

What is the best method for selecting the right traveler on cotton spinning frames in changing from one yarn number to another? We are running 28s yarn with 5-0 traveler. What traveler would be required on 16s yarn? (9772)

The following formula [TW Mid-November, '53, *Reference Data Issue*, p. 19] can be used to select a suitable trial traveler for a new yarn number:

$$\frac{A \times B}{C} = D$$

A = yarn number being run

B = weight in grains of 10 travelers on the frame

C = new yarn number to be spun

D = weight in grains of 10 travelers required for the new yarn

Here's the formula applied to your problem:

$$\frac{28\text{s} \times 7 \text{ grs.}}{16} = 12 \text{ grs.} = \text{No. 3 traveler}$$

The weight of 10 travelers for each number are found in the manufacturer's traveler table, or 10 travelers may be weighed on a grain scale.

The number of the traveler finally selected may vary slightly from the number indicated by the formula. Quality of cotton, spindle speed, ring diameter, inserted twist, length of traverse, and the use of separators will all affect the final selection.

Light-Metal Bobbins Were Just an Experiment

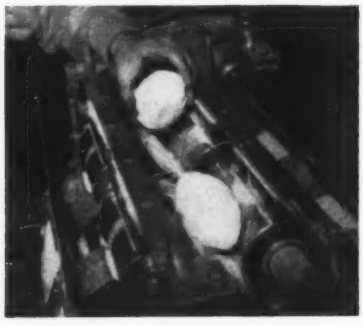
Technical Editor:

Do you know of anyone producing light-metal bobbins for Draper shuttles? (9523)

As far as we know, bobbins of this sort were made only on an experimental basis and are not commercially available.

Kinks AND SHORT-CUTS

Rubber Lip on Gill Box Makes Chalking Automatic



CHALKING of gill-box rolls used to be a bothersome manual task until rubber lips were fastened to the rolls as shown in the picture. The chalk now rides in the V, and the rolls are automatically kept in condition to prevent fiber sticking. The rubber is fastened to a metal frame that is attached to the front-roll framework. The chalk is turned occasionally to equalize wear. ***Clifford T. Bower, London, England***

Swap Protection Levers To Double Their Life

The knock-off lever in the protection motion on C & K looms will last twice as long if the levers on the drive end and the head end are swapped before they wear out completely; and it's just a 2-min. job to swap them. Here's how.

Use a 25/32-in. open-end wrench to loosen the check nut on the setscrew in the drive-end knock-off lever stand. Loosen the setscrew with a $\frac{7}{16}$-in. setscrew wrench until the tension roll releases the tension spring. Tap the exposed end of the tension spring gently with a hammer to break it loose from its cramped position.

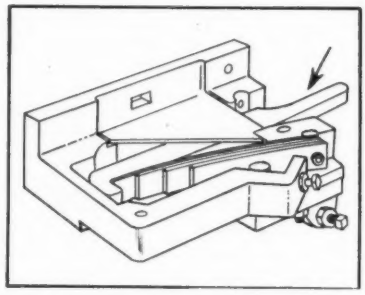
Stick the fingers of your left hand up through the bottom of the knock-off lever stand, and hold the spring away from the lever. Then pull the lever out with your right hand.

Occasionally the spring will have to be held away from the lever with a screwdriver. If the knock-off lever is badly battered from contact with the protection-rod dagger, the battered surface will have to be chiseled off before the lever will come out.

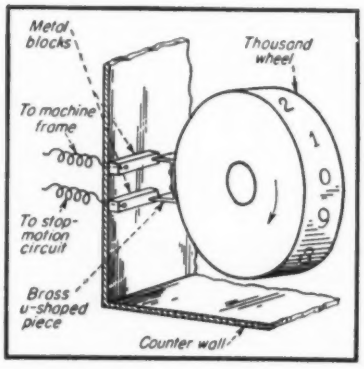
Repeat the same procedure to remove the head-end lever. If the high-roll ratchet take-up is used, the pawls will have to be propped or held up out of the way while the lever is withdrawn.

When the head-end knock-off lever is pulled out, push the drive-end lever in its place, and retighten the setscrew until the tension on the spring is tight enough for the lever to be moved with the thumb.

Replace the drive-end lever and the job is complete.



KNOCK-OFF LEVERS are removed before they are worn out and swapped from one end of the loom to the other. The bottom half always wears, and swapping the levers turns them upside down.



BRASS PIECE screwed to thousand wheel of revolution counter makes a contact with the two metal blocks to stop the machine when the required number of garments have been knitted.

Counter Controls Small Knitting Orders

A positive control can be made from a revolution counter to take the guesswork from knitting small lots of garments. The counter, fixed to the machine frame, can be driven from the dial drive and connected to the stop-motion circuit so that the machine will stop when the required number of garments has been reached.

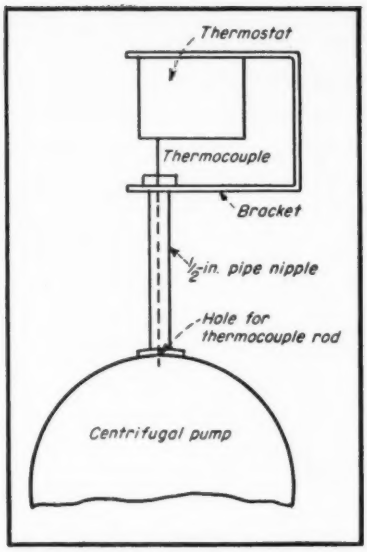
Fix two metal blocks inside the revolution-counter walls opposite the thousand wheel. Make an electrical connection to the machine frame with a rubber-covered wire to one block and a connection to the stop-motion circuit on the other block.

Fix a small brass U-shaped piece to the thousand wheel of the counter shaft so that a connection will be made to the blocks when the thousand wheel moves from nine to zero.

The counter will count cylinder revolutions. An eight-feed machine produces eight courses per revolution; so a 240-course garment knitted on an eight-feed machine requires 30 revolutions.

The setting on the counter is determined by the number of revolutions required subtracted from 10,000. If 3 doz. garments are required with 240 courses in each garment, the counter is set to 8,920 (10,000—[3x12x30]). *Dan Singer, Newton, Mass.*

[Since predetermining counters are commercially available, it might be well to compare them with this idea.—Editor]



THERMOCOUPLE transmits rise in water temperature in the pump to the thermostat, which opens and shuts off the pump to prevent serious damage.

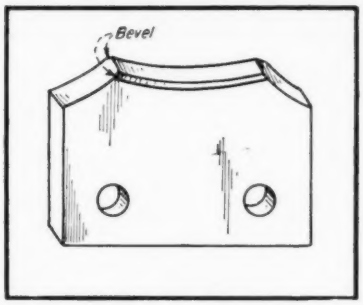
Protect Centrifugal Pumps With a Thermostat

A thermostat can eliminate costly repairs to centrifugal pumps that fail to operate at full production. This failure can be caused by air leaking into the vacuum to reduce the lifting capacity of the pump or by a blocking of the discharge line.

When water is not flowing through the pump at a normal rate, there is a rise in temperature. This temperature rise can be used to actuate a thermostat through a thermocouple. The holding coil of the pump's motor drive is wired in series with the thermostat; upon the opening of the thermostat, the coil circuit of the switch is de-energized and causes the pump to stop instantly.

The thermostat can be equipped with double contacts to permit the installation of a warning alarm where vital functions are dependent on the water supply. *Paul C. Ziemke, Oak Ridge, Tenn.*

Bevel Vibrator Level To Prevent Harness Skips



BEVELED EDGES of the vibrator "run" were grounded on an emery wheel. Now, worn pattern and box chains will not raise a vibrator lever falsely.

On C&K looms with Knowles head motions, the pattern chains and box chains often cause harness skips when they become worn. Widthwise lost motion in the chains causes a chain riser for one vibrator lever to raise or partly raise the adjoining lever, and harness skips or pattern balks result.

We have found a way to prevent these cloth defects. When we overhaul a head motion, we remove the complete vibrators and take them to an emery wheel. Then we slightly bevel each edge of the surface that is lifted by the chain riser.

When the vibrators are placed back in the head motion and the loom is started, worn chains will not tip the edges of adjoining vibrators. *Gaston Carrinet, Pittsfield, Mass.*

Make Holes in Metal Without a Drill

Holes can be made by chemical methods in metal too hard to drill by conventional means. Melted beeswax is painted on the metal surface. When the wax has hardened, a round hole is made in the wax, extending down to the metal at the spot the hole is required. This hole is then filled with sulfuric or nitric acid, which eats into the metal in a short time. When the action of the acid has stopped, the hole is cleaned out with waste cotton and the process is repeated until the hole is the right depth.

After the acid is removed, the hole can be rounded and made the required size with a round plug of wood containing abrasive material.

This method is also useful in a situation where drilling pressure would be harmful to the metal. *W. E. Warner, Essex, England*

$500 for Best Kink in 1954
$25 for Best Kink in Each Month
In Addition to Space Payment on Acceptance

You undoubtedly know many Kinks and Short-Cuts that are helpful to mill operators. Write them down and send them in. We pay promptly on acceptance—before publication. In addition, your Kink may win the $500 check for the best Kink of the year or the $25 check for the best Kink of the month; maybe both!

Send in your Kink now. There is always a contest going on. The more good Kinks you send in, the better your chances of winning a prize in addition to earning some easy money for every Kink accepted.

We will polish up your writing and will have an artist make finished drawings. But send in plenty of details so that your Kink can be clearly explained. Be sure your sketch is clear and well labeled, but it need not be a polished job. Best of all, send us a good glossy photograph of it; we will pay you extra if you do and we can use it.

Look over the Kinks in this and other issues. You will get ideas you can use as well as inspiration for Kinks you can send in. We like items that pertain to ways for improving machines, new devices that a mill man can build, attachments or methods of merit—anything that will cut costs, improve quality, or help production.

Your published Kink will be judged impartially by other mill men.

In cases of ties, duplicate prizes will be awarded.

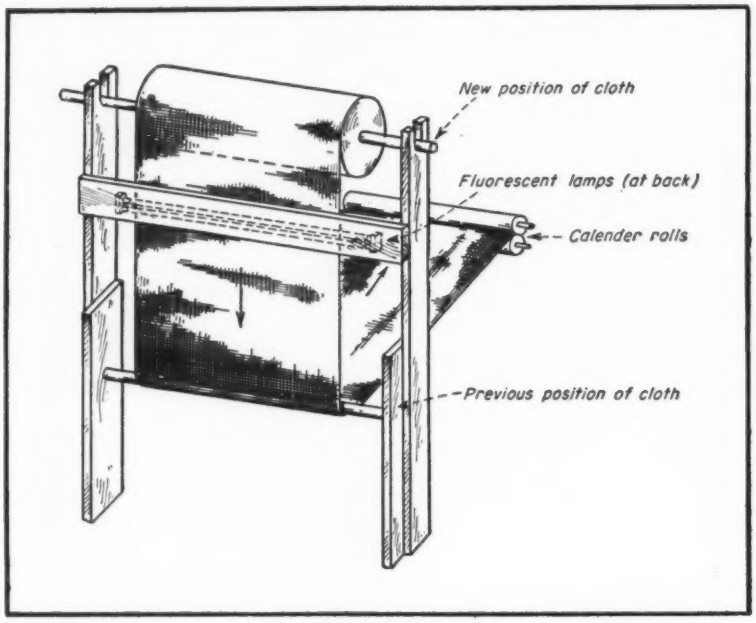
RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1954.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to select preferred Kinks in each issue. Their votes will select the best Kink, and their decision will be final.

Send Kinks to:
KINKS CONTEST, TEXTILE WORLD
201 E. Coffee St., Greenville, S. C.

Kinks and Short-Cuts

Cloth Inspection Now Combined With Pressing



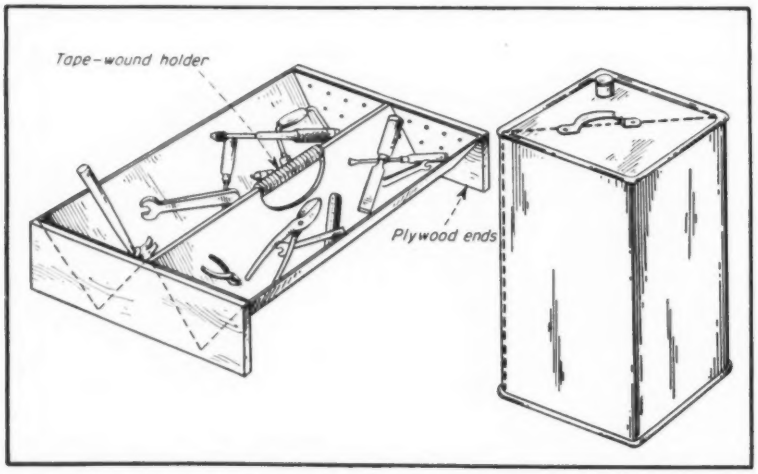
WOODEN FRAME lifts fabric to a position where fluorescent lights can be fixed to show up faults as cloth passes to the pressing machine.

Cloth inspection used to be a separate operation in our mill, but now we have combined inspection with pressing.

All we had to do was raise the cloth-roll supports to allow a good vertical length of fabric behind the presser. Then we put a couple of fluorescent lights behind the fabric to make defects show up more easily.

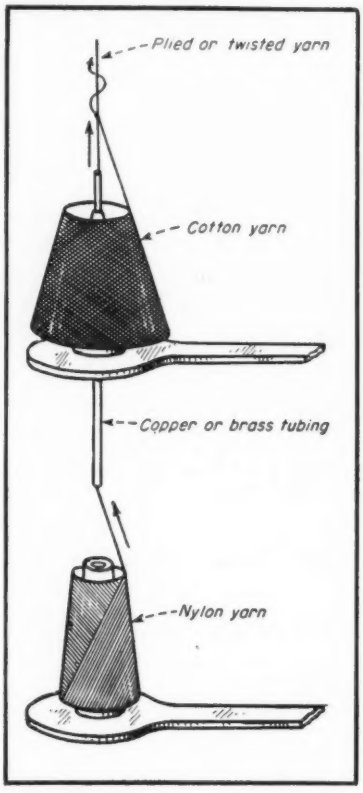
The pressing-machine operator still stands in the same place, but now he has a hand counter to total the defects so that they can be marked on the cloth ticket. *Dan Singer, Newton, Mass.*

Make a Tool Carrier From an Old 5-Gal. Can



HANDY TOOL CARRIER is made by cutting an old 5-gal. can diagonally on two sides after the handle and filler cap have been removed. Bend the cut can open, cut a hand opening in the center, and bind all the sharp edges with tape. Nail the ends to a couple of pieces of light plywood, and the carrier is ready to use. *C. H. Willey, Penacook, N. H.*

Make Ply Yarn On the Knitting Machine



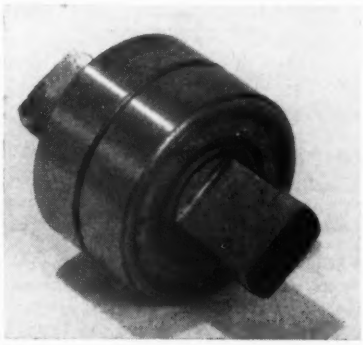
EXTRA BOBBIN STAND holds the cone of nylon yarn below the regular bobbin stand to accomplish twisting right in the knitting-machine creel. The nylon yarn is run through a brass or copper tube pushed through the cotton-yarn cone.

Twisting nylon with cotton yarn for reinforcing hosiery heels and toes is an added process that raises costs. But true plaiting doesn't occur if one end of cotton and one end of nylon are run into the needles separately. This short-cut method produces an uneven effect that often shows up after the dyeing operation.

The yarns can be slightly twisted to eliminate this unevenness by fixing the nylon-yarn cone on a bobbin stand underneath the cotton-yarn cone. A copper or brass tube is pushed through the cotton-yarn cone, and the nylon yarn is threaded through the tube. Both ends are then drawn together through the first porcelain guide and led to the yarn feeder.

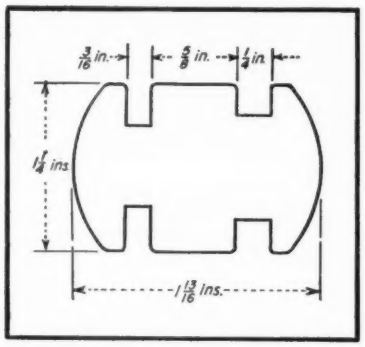
This method of twisting also allows the nylon yarn to be cut and bound with greater accuracy. *Paul Howard, High Point, N. C.*

Use Old Tension Pulleys To Make Pittman Rolls



GOOD PITTMAN ROLL is made from old ball-bearing tension pulleys that became unusable. The bearing was knocked out, cleaned with cleaning fluid, and greased. Then two such bearings were placed face-to-face on a tension-pulley shaft. The shaft ends were filed down to fit the Pittman-roll bracket, and the "new" Pittman roll lasts for years. ***Maxwell Hardy, Columbus, Ga.***

Metal Plate Prevents Warping Trouble



METAL PLATE is made from 1¼ x 1/16-in. stock and inserted in the cone holder to allow yarn to run off tubes more freely.

When we switched from cones to tubes we had trouble with rayon yarn running off the tip of the tube during warping. The tube dips in the front when the yarn runs off and prevents the yarn from running well.

We remedied this trouble by using a metal plate to insert into the prongs at the top of the cone holder. The cone-holder end is opened, and the plate is inserted so that the holder does not snap back. The tube now stays firmly on the cone holder and allows the yarn to run off freely.

How To Cover Take-Up Rolls With Sheet Carborundum

When take-up rolls are covered with sheet Carborundum paper, it's often hard to get a neat job. A lot of blisters can develop, and a bad joining can be made at the ends of the sheet.

We use two strips of wood to put the sheets on smoothly. To cover a take-up roll, we first cut a piece of the paper to reach from one end of the roll to the other. The width of the cut sheet is a few inches greater than the diameter of the take-up roll.

We lay this sheet on a clean floor surface with the face down and wet the back of the sheet with water. We spread glue thinly and evenly on the surface of the roll.

Then we start the paper on the roll at one of the seams in the wood surface and tack a thin strip of wood lengthwise across the roll at the edge of the paper. We turn the roll slowly to wind on the paper and lightly iron out all blisters and wrinkles by hand.

When the paper is wound to the strip of wood, we tack another strip of wood to the roll. Both strips are tight against the surplus paper between them. The surplus paper then overhangs the two strips.

We let the paper dry for several hours. As the paper dries, it draws tight around the roll and removes blisters and wrinkles.

When the paper is thoroughly dry, we remove the first-applied strip of wood, cut off the surplus paper with a sharp knife or single-edge razor blade, and remove the second strip of wood.

Finally, we remove all rough and sharp places on the joined surface with an old piece of sandpaper. Then the take-up roll is ready to be put in a loom.

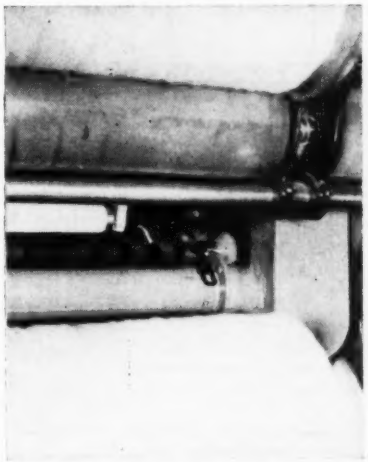
This method requires little working time and results in a nicely finished take-up roll that will run for a long time without trouble. *Charles S. Bicksler, Lancaster, Pa.*

Tag Sizing Chucks When You Remove Them

If you ever have to remove more than one chuck from a No. 250B sizing machine, be sure to tag them. Chuck flanges are not ground until the chuck is on the spindle. This procedure insures that the flange is concentric with the spindle.

If you put the wrong chuck back on a spindle, you'll get an undesirable sizing package. *Universal Winding Co.*

Fluorescent Tube Lights Dark Area of Woolen Card



ONE FLUORESCENT TUBE set right in front of each set of rub aprons improves visibility in an otherwise dark area. This card is also equipped with a suction device for broken ends, but the need for light is important on any woolen card. Another way to light the doffer section was described on p. 162 of the February, 1954, issue of TEXTILE WORLD.

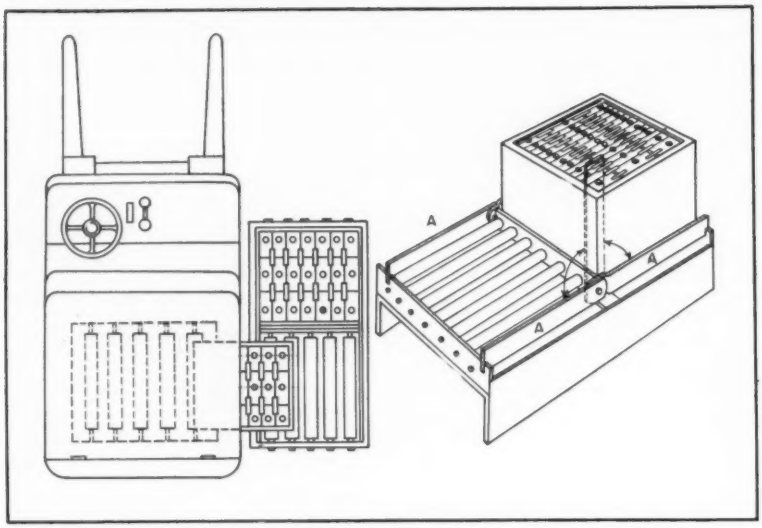
How We Get Rid of Vapor In Our Dyehouse

For many years, steam in the atmosphere of our package and beam dyehouse was a troublesome problem. This steam condensed on windows, walls, ceiling, and all equipment that was cool enough to allow condensation. Maintenance had to combat this film of water on almost everything, and sometimes production was interrupted.

The source of the steam was hot liquids discharged from the dye machines. These liquids were discharged through covered trenches in the dyehouse basement to a sewer. Water vapor rose from the liquid surface into the basement and on up into the dyehouse through the many necessary openings in the floor. This flow of vapor was aided by exhaust fans in walls above the dyehouse floor.

We installed an exhaust blower to remove the vapor from the covered ditches and discharge it above the dyehouse roof. This simple installation has almost completely eliminated our condensation problems in the dyehouse, and everyone is extremely pleased with the results. *W. H. Beers, Danville, Va.*

Changing Lift-Truck Batteries Takes 5 Mins.



BEDS OF ROLLERS are the key to this quick-changing system for electric-lift-truck batteries. The special skid has two sets of rollers, and the battery compartment has rollers in the bottom. Bringing the battery to the truck often eliminates long hauls and saves time.

You can save time by bringing batteries to your lift trucks instead of having the truck travel to a central charging room.

Just put roller bearings in the truck's battery compartment, and make a roller-bearing skid to handle two batteries.

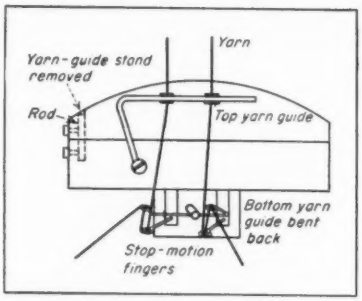
Put a fresh battery on the skid, and pick up the skid with a spare lift truck.

At the truck that needs the fresh battery, roll the old battery onto the positioned skid, back up the skid, and roll the fresh battery in.

The change should take about 5 mins., and the truck need not travel all the way to the charging room. Even with 24-hr. truck operation, 1.5 batteries per truck should be sufficient if this replacing method is used.

The skid should be built, as shown in the sketch, with the opening 9½ ins. from the floor to allow handling by fork-lift or powered hand platform truck. The 2½-in. steel rollers are mounted in antifriction bearings. Four steel bars A keep the batteries from sliding off but can be swung up when the battery is rolled off or on. *Gould-National Batteries, Inc.*

Knitting Stop Motion Bypasses Feed Wheels



A ROD replaces the top yarn guide stand and the top yarn guide replaces the feed wheels. The tips of the bottom yarn guide are bent back so that the stop motion can be used without the feedwheels.

So that we could use the stop motion without using the feedwheels on our Blackburn interlock machines, we rebuilt the stop-motion mechanism. Here's how we did it:

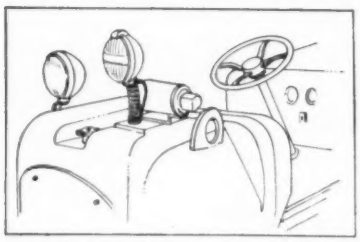
We removed the top-yarn-guide stand and used a short rod in its place to retain the stop-motion cover.

The feedwheels are removed from the unit, and the yarn guide is screwed in its place. The tips of the bottom yarn guide are bent back 45°, until the porcelains line up with the stop-motion fingers.

The yarn is then threaded through the top yarn, through the stop-motion fingers, and through the bottom yarn guide to the needles.

This modification makes threading easier and gives us less trouble.

Spotlights on Springs Signal Lift-Truck Approach

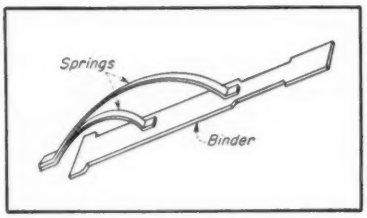


FOG LIGHTS mounted on springs wobble around as the truck approaches and attract attention even in broad daylight. The horn seldom has to be used. The sealed-beam, 5-in., 6-v. lights have a 1-in. black spot painted or stuck on the center to prevent direct glare into someone's eyes. There's one light on the mast and another on the rear. The back light goes on automatically when the truck backs up, and the front light is on whenever a forward gear is used.

Add a Second Binder Spring To Stop Bang-offs

We were running Glen-plaid weaves on our multishuttle looms and were having a lot of bang-offs on the shuttles that stayed out of action for a long time. We tried all our usual shuttle-boxing tricks, and none gave results. The shuttles continued to slide toward the mouth of the shuttle boxes while they were out of action.

Finally we put an extra spring on the binder, and it solved our problem. To add the spring, we first removed about half the tension from the original binder spring. Then we added a second spring almost twice the length of the original one and adjusted the tension on it so that both springs have the same tension. The tension on the two springs is still about equal to that of an ordinary binder spring, but the tension is equally distributed over the entire length of the binder.



TWO SPRINGS on each binder equalize the tension on the full shuttle and keep the shuttle all the way in the box when the shuttle is out of action for several picks.

Now, when we have a shutle out of action for several picks of the loom, we add the second binder spring and bang-offs stop. *Michael Lazarides, Athens, Greece*

Best-Kink Award for March

Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 200 practical mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

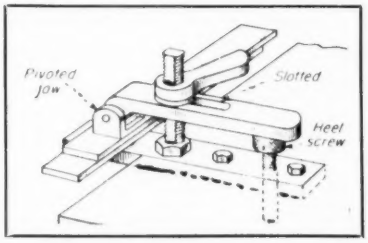
If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answer in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.

The best Kink for March, according to TEXTILE WORLD reader-judges, was:

"Get Warp Size Content In Four Easy Steps"
By Edward S. Rudnick, New Bedford, Mass.

Mr. Rudnick is being sent a check for $25 with the compliments of TEXTILE WORLD.

Try This Bench Clamp For Bulky, Irregular Work



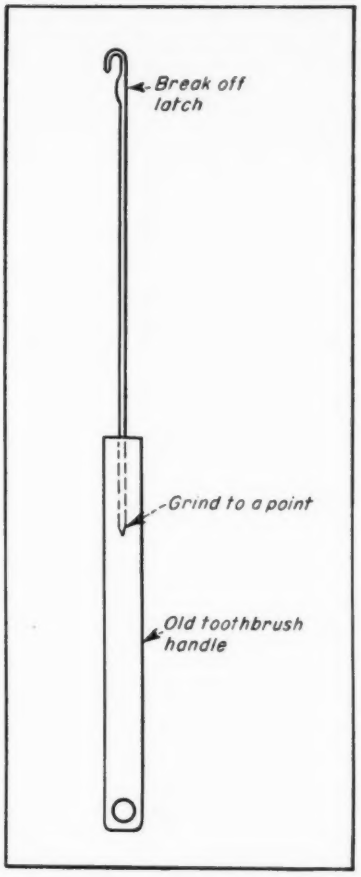
RUGGED BENCH CLAMP is made from ¾x4-in. steel bar stock and is bolted in a groove in the bench. The heel screw is tapped into the plate with a clearance hole under it. The clamp strap is slotted and is held down with a flat-sided screw and a dog nut. The pivoted jaw gives further versatility to the clamp, which can handle bulky jobs difficult in an ordinary vise.

Use Toothbrush for Knitter's Hook Tool

One of the most useful tools in a knitter's tool kit is a needle with the latch broken off. Some knitters make this hook easier to use by putting it in a wooden handle or soldering it to a metal handle.

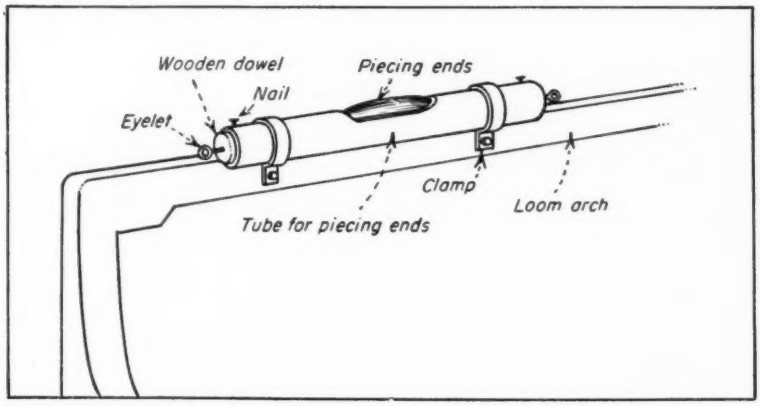
An old toothbrush will make a light, practical, and attractive handle. Grind the butt off a long-stemmed needle, and grind the tail end to a point. Cut off the bristle part of an old toothbrush, heat the needle point to a cherry red, and plunge the point into the handle of the toothbrush.

When the latch is removed, you have a useful tool that is valuable for pulling on the fabric after press-offs, fixing holes, and pulling yarns through awkward places.



OLD LATCH NEEDLE has butt ground off. The tail is ground to a point, heated, and pressed into the handle of an old toothbrush.

Wooden Dowels in Tubes Keep Warp Piecing Yarns Neat



WOODEN DOWELS fit snugly in the ends of the tube to hold warp piecing yarns in place. The dowels are removed for replacing the yarn by lifting out the nails and pulling the eyelets.

We used to have a lot of trouble with weavers' piecing ends getting dirty and tangled on our looms. We have always used tubes on the arch of looms to hold the ends, but the vibration of the looms caused the ends to work out of the tube, become soiled, and fall in the warp.

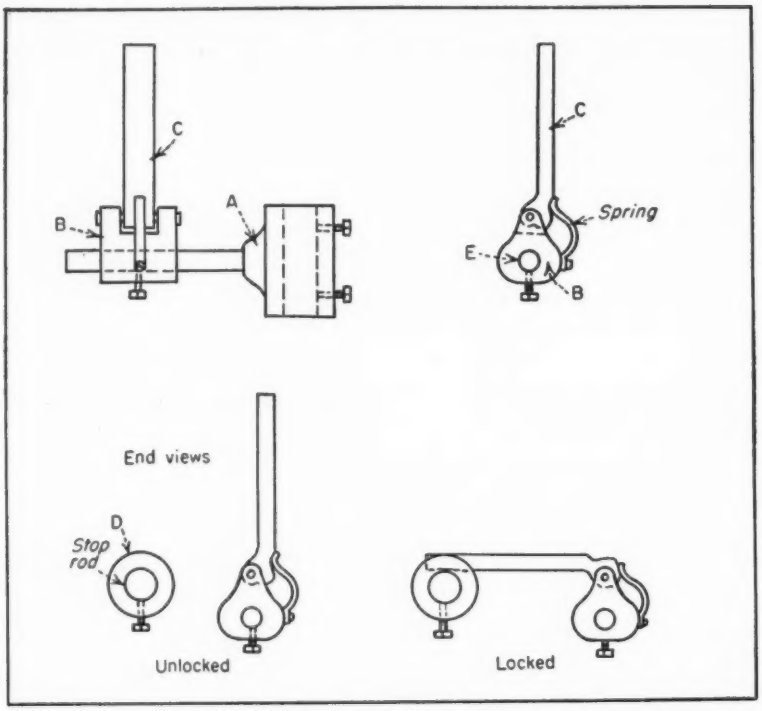
We recently found an easy way to correct this trouble. We had several hundred dowels made 1½ ins. long and 1¾ ins. in diameter. A ⅞-in. eyelet, similar to that used to hook a screen door, was put in one end of the dowels.

A dowel was put in each end of the tubes on the loom and pushed flush down with the ends of the tubes. A ⅞-in. hole was bored from the top down through the tube and blocks. A nail was inserted from the top of the tubes to hold the dowels in place. Weavers pull out ends from a small half-moon hole cut in the top of the tube.

The tubes and ends of the dowels were painted the same color as the looms to make them look neat.

At new warps we remove the dowels by lifting out the nails and pulling the eyelet, and we take out the old piecing ends. Ends from new warps are placed in the tube with a hook, and the dowels and nails are replaced. *Arnold Bolding, Alabama City, Ala.*

Try This Safety Lock on Older Roving Frames



FINGER BAR C is the key part of this safety lock for roving frames. The frame can't be started when the bar is horizontal, because the shipper rod is locked on the loose pulley.

Many accidents on roving frames can be prevented by providing some means of locking the belt shipper with the driving belt on the loose pulley when you are cleaning, oiling, or repairing the frame.

The older frames are not usually equipped with safety locks, but a locking device consisting of simple parts can be made in the mill machine shop and easily attached to the frames.

A bracket stud *A* is fastened with two setscrews to the head-end vertical creel rod. The stud is parallel to the shipping rod. A bracket *B* holding a pivoted finger bar *C* is held by a setscrew on the stud so that when the finger bar is horizontal it rests on the shipper rod against a collar *D*, which is setscrewed to the shipper rod. This finger bar can be swung to a vertical position when it is not in use. A flat steel spring attached to the bracket fits into notches on the end of the finger bar to hold the bar securely when in either the vertical or horizontal position.

To set the safety lock, shift the driving belt to the loose pulley. Move the bracket stud *A* vertically on the creel rod until the finger bar *C* rests horizontally on the shipper rod. Tighten the setscrews on the bracket. Move the collar *D* on the shipper rod close (about $\frac{1}{16}$-in. clearance) to the inside edge of the finger bar. Tighten up the setscrews on the collar.

The spring holds the finger bar in a vertical, inoperative position in normal operation of the frame. When the frame is safety locked, the belt is moved to the loose pulley and the finger bar is placed horizontally in contact with the collar on the shipping rod.

The frame cannot be started until the finger bar is returned to a vertical position. *T. K. Pattabhiram, Warangal, India*

Fan on Spooler Head Keeps Overhead Clean

The area above our Barber-Colman spoolers used to be rather dirty. We cleaned and brushed down once a week, on Saturdays. Some of our ends down and slubs were attributed to this lint falling down during the week.

We remedied the situation—and saved the extra cleaning—by mounting a 16-in. fan next to the traveler motor. The air is directed up at a 45-degree angle and to one side of the spooler.

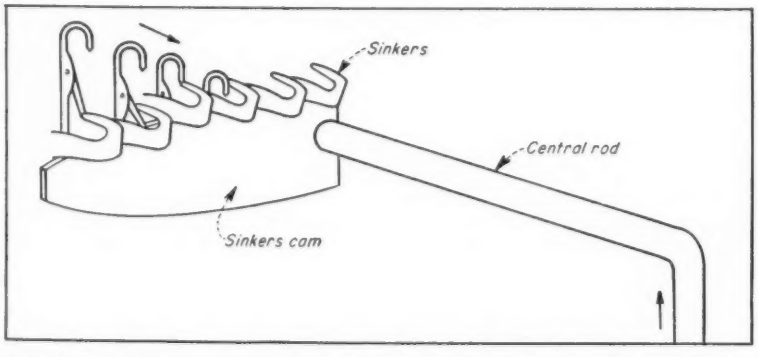
The ceiling and the lights are kept clean now, and our quality is better. *A. D. Hughes, Buenos Aires, Argentina.*

Raise Sinkers To Get a Better Slack Course

The slack course on the socks from our double-cylinder machines did not satisfy our loopers. They complained that it was not slack enough and it exceeded the full course.

After working on the stitch-cam control without improving the slack course, I hit on the idea of raising the sinkers. I made a cam that fitted against the cylinder under the sinkers.

To raise the cam for the slack course so that the needles would pull a longer stitch, I fitted a cam to the pattern drum. The pattern-drum cam lifts a rod connected to the sinker cam to raise the cam and give us a better slack course than we had before.



SINKERS are raised, for one course, by the cam as the needles are pulled down by the stitch cam. This method produces a large and even looper's course.

You have to begin with **COAL** to finish with brighter, cleaner YELLOWS like this!

PEOPLE often ask us: Does control of dyestuffs production from coal to finished colors *really* make a difference in finished dyeings? We think *this* is the most dramatic way to answer:

Make up a sample dyeing with one of Pittsburgh's new yellow shades—Pittsburgh-Vat Flavone GC, Golden Yellow GK or Yellow PGH. Each is manufactured with an exceptional degree of chemical purity which can be achieved only by Pittsburgh's complete, unique, and exacting control of quality.

Then look at the results! Pittsburgh's color purity is brilliantly reflected in the clarity and sparkle of the dyed sample.

Now use one of the shades on a production run. Note the economy of its high tinctorial strength—a real dollar-saving advantage you get from Pittsburgh quality. And finally, *reorder*, and you'll enjoy perfect, drum-to-drum uniformity and prompt, on-time deliveries, thanks once again to Pittsburgh's control of quality and of basic raw materials.

Aren't those advantages important enough to investigate *right now?* Why not contact our Pittsburgh, Providence, Philadelphia or Charlotte office for full information . . . *today!*

W&D 5147

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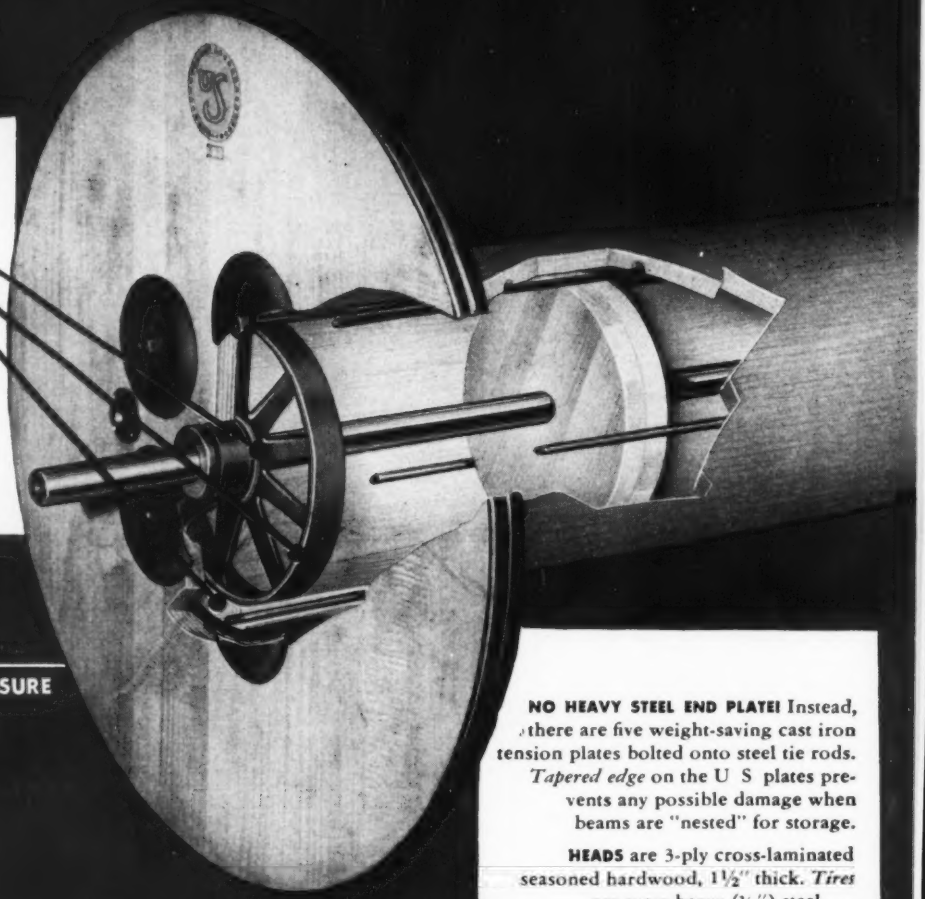
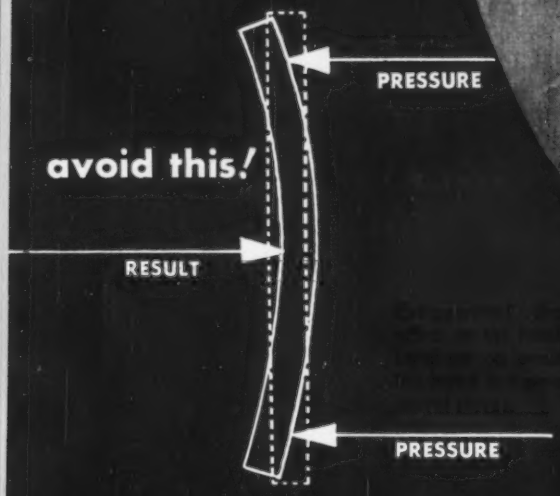
3-POINT SUPPORT FOR THE BEAM HEAD

shoulder at hub of casting
periphery of casting
ends of staves

U S Warper Beams are *all* built with 3-point support, which provides additional resistance against outward deflection during build-up of the beam.





NO HEAVY STEEL END PLATE! Instead, there are five weight-saving cast iron tension plates bolted onto steel tie rods. *Tapered edge* on the U S plates prevents any possible damage when beams are "nested" for storage.

HEADS are 3-ply cross-laminated seasoned hardwood, 1½" thick. *Tires* are extra heavy (⅜") steel . . . grooved, heated and shrunk-fitted onto the heads for tighter assembly. Eastern pine barrel staves are supported at each end by round cast iron supports.

U S BOBBIN & SHUTTLE CO.

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TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y. MAY, 1954

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TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y. MAY, 1954

Outstanding TRADE LITERATURE *Free for the Asking*

NO REPEATS . . . Listed here for May are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

TEXTILE MACHINERY AND AUXILIARY EQUIPMENT

A doubler twister is described in a bulletin from Fletcher Works. Conventional two-head, tapered-top, and tapered-both-end packages are made with capacities of 2½ lbs. of filament yarn and 1¾ lbs. of spun yarn. Creels can accommodate cones, cheeses, tubes, pirns, cakes, spools, and bobbins. **(F-1)**

Automatic pirn winder with a rotary traverse for winding speeds up to 12,000 rpm. is described in a bulletin from W. Schlafhorst & Co. A rotary grooved drum guides yarn to the pirn. The pirn heads can be arranged for bunching. **(F-2)**

A warping creel, built by N. V. Machinenfabriek L. te. Strake, is described in a bulletin. The creel is fitted with a special tensioning device, an electric stop motion, a new loading system for the cones, and a new device to restrict and guide the balloon. **(F-3)**

A spinning-frame cleaner that has 12 separate air currents is described in a bulletin from Parks-Cramer Co. Each air outlet is separately adjustable for velocity, and most of the outlets are adjustable for direction. Flexible cuffs yield on contact with any object. **(F-4)**

Coiler conversions are described in a bulletin from Southern States Equipment Corp. A complete line of coiler units, including coilers for wool or synthetic slivers, is described. A new head has been developed to be used with 15-in. cans on combs, cards, gill boxes, or wherever a coiler may be used. **(F-5)**

An individual card drive is described in a bulletin from Southern States Equipment Corp. The simple construction requires small outlay and low maintenance cost. A 1.5-hp. motor with a fiber pinion drives a large gear on the card shaft. The drive is controlled by a clutch lever. **(F-6)**

Homogenizers are described in a bulletin from Manton-Gaulin Mfg. Co., Inc. An installation of homogenizers is described, and the layout of a single-stage textile homogenizing valve is shown. **(F-7)**

An open-width vacuum extractor equipped with a reinforced adjustable-slot vacuum extracting box is described in a circular from Birch Brothers, Inc. The machine is arranged to handle cloth from a fold or roll. The cloth can be delivered folded onto a truck or on a roll. **(F-8)**

A vacuum pump unit with a flock trap for removing moisture from fabrics is described in a circular from Birch Brothers, Inc. The unit consists of a Nash pump with the motor mounted on a heavy base with a V-belt drive. **(F-9)**

Tricot beams for nylon yarns are described in a leaflet from Briggs-Shaffner Co. The 21-in. flanges are made from heat-treated aluminum. The bores are suitable to be used on standard 4½-in.-dia. tricot arbors. The 7¾-in.-dia. barrels are 19 ins. long. **(F-10)**

Rayon section beams are described in a leaflet from Briggs-Shaffner Co. The beams are made from heat-treated aluminum. The flanges have two steel-bushed driving holes in each outer side to line up to ¼°. These beams can be used on both Cocker and Reiner warpers. **(F-11)**

A heater for drying and curing is described in a leaflet from Dravo Corp. A case study is given of the heater in a rug manufacturing concern. Temperature of 200° F. is built up in the room by recirculating air through the heater located in an adjoining room. **(F-12)**

"Measuring and Controlling Liquid Levels" is the title of a bulletin from Minneapolis-Honeywell Regulator Co. Sections on measurement, transmission, control, and handling difficult liquids are included. Twelve systems are compared. **(F-13)**

Remote-bulb thermometers for indicating, recording, and controlling are described in a catalog from Minneapolis-Honeywell Regulator Co. The data cover selection, recorders and indicators, pneumatic control, electric control, program control, psychrometers, bulbs, tubes, and fittings. **(F-14)**

Web heating with infrared radiant panels is described in a bulletin from Edwin L. Wiegand Co. The panels are used in curing resin impregnations, predrying, continuous drying, heat setting and stretching, and embossing and glazing. **(F-15)**

Gear motors are described in a bulletin from General Electric Company. Output

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shaft speeds are 780 to 5.7 rpm. with ratings from 1 to 30 hp. A step-by-step diagram illustrates the disassembly of a motor. Cutaway views of double reduction units are shown. **(F-16)**

An electric motor line is described in a brochure from The Louis Allis Co. The motors are dripproof, totally enclosed, fan cooled, and explosionproof in ratings up to 40 hp. at 3,600 rpm. The line features improved ventilation, greater protection, and new bearing construction. **(F-17)**

CHEMICALS AND SUPPLIES

Antistatic treatments are described in bulletins from Nopco Chemical Co. The methods of application of antistatics on wool, synthetics, and blends are given. Methods of preparing the emulsion, and its scouring and fulling properties are listed. **(F-18)**

"The Story of Starches" is a booklet from National Starch Products Inc. Commercial raw starches, specialty starches, and starch derivatives are described. The handling of starches and a glossary of starch terms is given. **(F-19)**

Sperm-oil products are described in a bulletin from Archer-Daniels-Midland Co. The bulletin covers the chemical structure and composition, reactions, applications, and solubility data on the company's new alcohols. **(F-20)**

"Chemicals For the Textile Industry" is a booklet from Rohm & Haas Co. The products are classified in groups: reducing and stripping agents, desizing materials, resin finishes, synthetic sizes, dispersing agents, and surfactants. Uses of the chemicals are given. **(F-21)**

Polyvinyl chloride fibers—Rhovyl, Fibravyl, Thermovyl, and Isovyl—are described in a folder from Julian Cerf. These fibers produce puckered effects when woven or knitted with other fibers and given a wet treatment. A chart of specific uses is given. **(F-22)**

Fiberglas yarns are described in a booklet from Owens-Corning Fiberglas Corp. Properties and applications of Fiberglas yarns are given with specifications of fabrics, tapes, and braids. Warping, winding, weaving, and knitting techniques are described. **(F-23)**

"Acetate" is a reprint from the Encyclopedia of Chemical Technology and is distributed by Celanese Corp. of America. The physical and chemical properties of acetate are described in detail, and stretched saponified acetate is described. **(F-24)**

Ammonia-leak detectors are obtained from Allied Chemical & Dye Corp. The device is a long-sulfur-impregnated taper that is lit and held near the equipment suspected of leaking. **(F-25)**

Metallic card clothing is the subject of a bulletin from J. W. and H. Platt Ltd. Experiences in cotton, woolen, and worsted mills with metallic card clothing show how yield is increased and quality improved. **(F-26)**

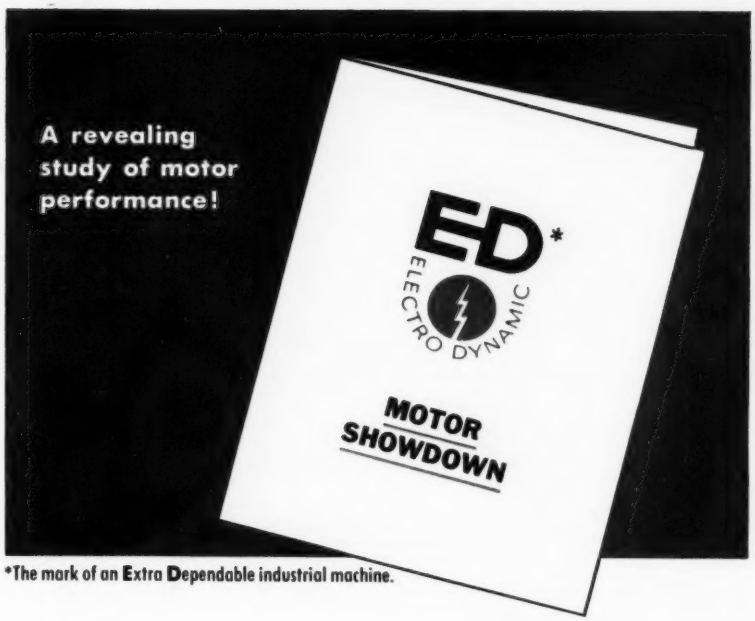
Spools are the subject of a pamphlet from Akron Spool and Mfg. Co. How such advanced spools as those with automatic pickup, internal drive, and X-slotted twister bobbins can be made at low cost is described. **(F-27)**

ENGINEERING & MAINTENANCE

"Piping Pointers" is the title of a book of helpful hints from Crane Co. on the application and maintenance of piping equipment. Part names, functions of valves, valve designs, valve selection, pipe fittings, and how to make joints are illustrated and described. **(F-28)**

Roof coating is described in a pamphlet from The Philip Carey Mfg. Co. Tips on roof maintenance are given, and photographs show the performance of various coatings after three years of weathering. **(F-29)**

Casters with a double-action spring to allow compensations for floor irregulari-



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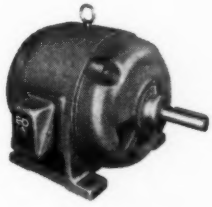

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Reader Service (Continued)

ties to minimize bounce or shock is described in a pamphlet from Faultless Caster Corp. Other types of casters such as ball-bearing and rigid-plate casters are listed. **(F-30)**

A power sweeper is described in a bulletin from G. H. Tennant Co. The machine sweeps over 100,000 sq. ft. per hr. and replaces a 3- to 12-man push-broom crew. The operator uses three controls for 95% of his work. A 700-lb. load can be dumped in 30 secs. **(F-31)**

"Floors and Floor Problems" is a brochure from The Tremco Mfg. Co. Floor construction, floor deterioration, special problems of industrial floors, and how floor troubles can be diagnosed and treated are subjects described. **(F-32)**

Valve selection and maintenance are described in a booklet from The Cooper Alloy Foundry Co. The booklet covers the selection of valve types and materials, installation and operation hints, and inspection and maintenance pointers. **(F-33)**

Flexible couplings are the subject of a brochure from Lovejoy Flexible Coupling Co. Specifications and dimensions of various couplings and a horsepower-to-torque conversion table are given. **(F-34)**

Super-power V-belts are described in a folder from Raybestos-Manhattan, Inc. A 40% increase in horsepower capacity over standard belts, resistance to shock loads, and length stability is claimed for the product. **(F-35)**

Boiler feed water is the subject of a bulletin from Hungerford & Terry, Inc. Information is given on water softening, demineralization, dealkilizing, silica removal, and hot zeolite and chemical softeners. Photographs of plant installations are shown. **(F-36)**

High-pressure valves are the subject of a bulletin from Pennsylvania Pump & Compressor Co. When installed on the discharge line of air and gas compressors, the valve checks downtime, noise, vibration, and tank ring, and replaces stop and safety valves. **(F-37)**

Hydraulic lift trucks are described in a bulletin from Big Joe Mfg. Co. Manual units are from $236.50, have a 750-lb. capacity, and lift to 71 ins. Platform models, fork models, and battery-operated models are described. **(F-38)**

Heat pumps are described in a bulletin from Westinghouse Electric Corp. The heat pump is a self-contained system that provides warm filtered air in the winter and cool dehumidified air in the summer without water or flame. **(F-39)**

A pressure-gauge catalog has been released by Manning, Maxwell & Moore, Inc. The catalog includes quality gauges, drawn-case gauges, chemical attachments, chemical gauges, laboratory and pocket test gauges, pressure and vacuum gauges, and gauge-engineering information. **(F-40)**

GENERAL

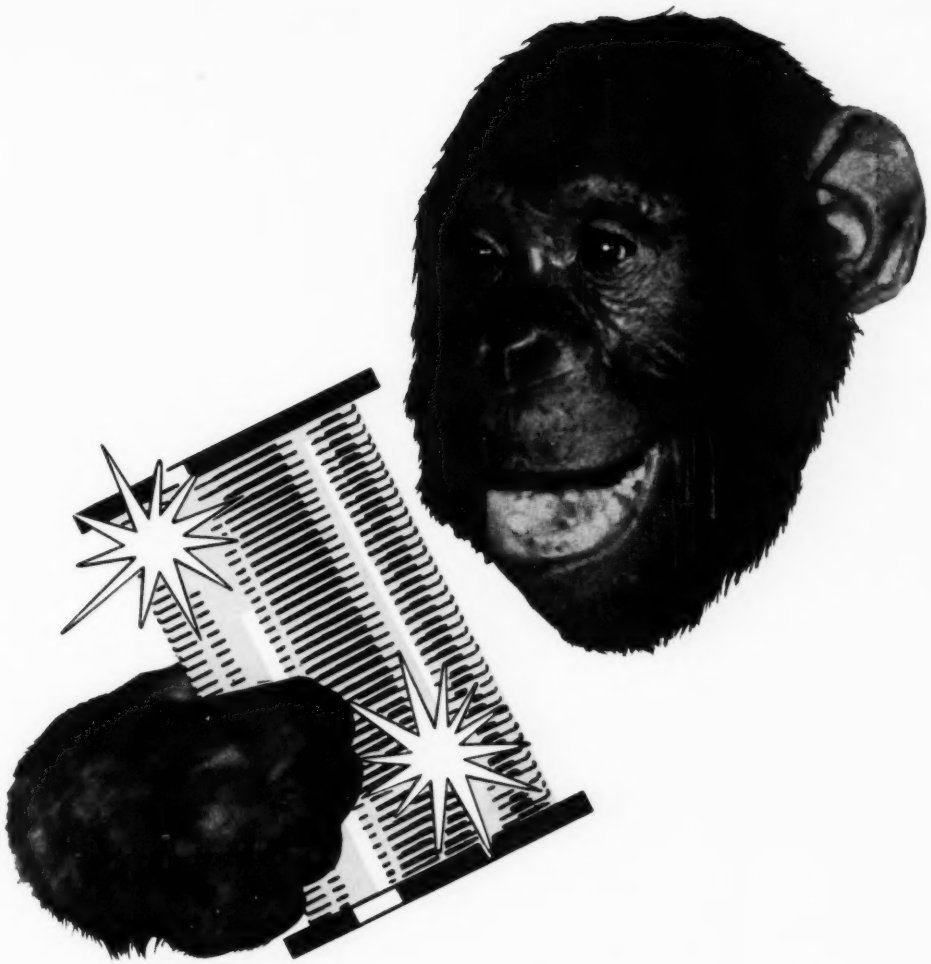
Remote control for industrial trucks is described in a bulletin from Barrett-Cravens Co. A small control box fitted to the operator's belt moves the truck or trailer train forward or around turns and stops the truck when goods are loaded from a warehouse. **(F-41)**

A speed balance is described in literature from Harry W. Dietert Co. The balance has a deflection scale reading up to 10 gms., a capacity of 1,000 gms., and a sensitivity of 20 milligrams. A direct moisture scale provides greater speed in moisture determination. **(F-42)**

An electronic time system is described in a form from International Business Machines. Indicating clocks with as much as 12-hr. errors are corrected twice daily if necessary. **(F-43)**

Hand hoists are described in a booklet from The Yale & Towne Mfg. Co. The hoists are light in weight and have a capacity of ½ to 2 tons. **(F-44)**

How a multistory plant saved $25,000 per year by installing a six-story vertical-conveyor system is described in a



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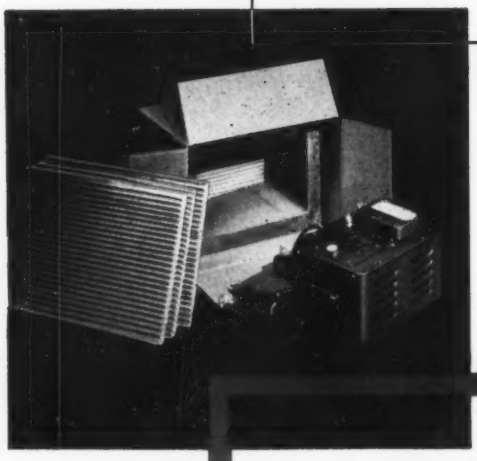

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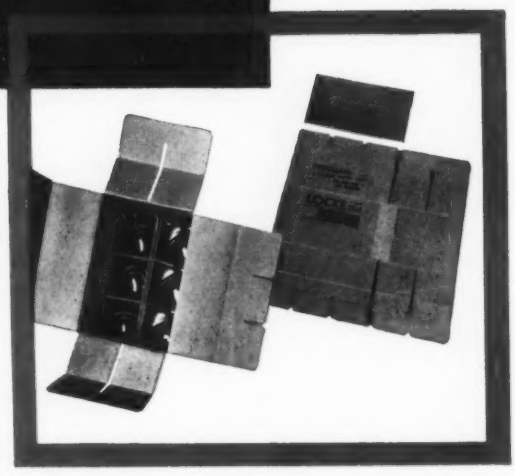

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Reader Service (Continued)

reprint from Gifford-Wood Co. The general operation of the convevor is shown with a schematic drawing of the system. **(P-45)**

Central-control panels that use visual-aid techniques to present process information to the operator is described in a bulletin from Panellit, Inc. Typical applications in various industries are shown. **(P-46)**

Labor costs and the 'U' campaign are the subject of a booklet from Ralph E. Burt Associates. The "U" campaign is centered on selling quality, and is a program for boosting employee enthusiasm for quality. **(P-47)**

A vertical turbine fire pump is described in a bulletin from Worthington Corp. Performance data and outline dimensions of the pumps are given; and the bowl-design features are described. **(P-48)**

A hand printer for shipping operations is described in a bulletin from Weber Label & Marking Systems. The stencil that does the printing on the package can be typed at the same time the invoice, shipping order, or bill-of-lading forms are prepared. **(P-49)**

How inventory totals can be secured in one day, despite heavy seasonal demands, is described in a folder from Remington Rand Inc. The tally maintains 39,000 three-digit inventory totals while accepting 9,000 entries per hour from 10 operators. **(P-50)**

Thermal Efficiency

CONTINUED FROM PAGE 103

a normal operating pressure of up to 125 psi.-ga. They are rated at 7,500 lbs. per hr.; actual steam demand is 5,000 lbs. per hr.

An important advantage of the vertical boiler is its quick steaming characteristic. Lancashire boilers for other processes are in a separate part of the mill, but all the boilers are interconnected by the piping system.

One boiler can operate at 30 psi. while the other boiler and the waste-heat recovery system are operating at 120 psi. The steam supplied by these boilers is used to process the cloth after it is printed. Fig. 1 shows the general arrangement of the oil-fired equipment with the waste-heat recovery system.

The exhaust gases from the Ruston engines are led from the engines to four Clarkson heat-recovery units. Three of the waste-heat boilers have a 45-sq.-ft. heating surface; the other has 35 sq. ft.

The exhaust gases enter the top of the heaters, pass downward over the thimble tube heating surface, and exhaust upward to the atmosphere. Internal bypass arrangements are not needed because the inner tube plate can expand. If the steam available from the system is not required, the heaters can be used dry as silencers. A thermosyphon system connects the units to a steam drum, set on a platform 12 ft. above the floor level; the

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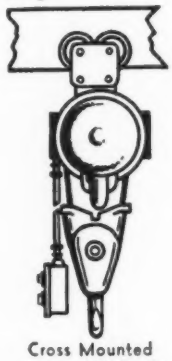

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water level of the drum is aligned with the water level in the boilers.

The steam and water drum acts as a steam accumulator for peak-load service. By using the extra steam, the intensity of sudden fluctuations in the water level is reduced. This drum is also a part of the waste-heat recovery system.

Water circulates from the bottom of the drum to the heaters and is heated by the energy recovered from the exhaust gases. The water is returned to the upper part of the drum, where the steam separates from the water. If desired, both of the oil-fired boilers can be isolated from this system, and the waste-heat recovery system can be used for space-heating and process requirements.

Top-Notch Maintenance

CONTINUED FROM PAGE 75

work to keep them busy, they do other work in pipe fitting or plumbing.

The machine-shop foreman has charge of machinists, carpenters, welders, etc.

One important job under the supervision of the machine-shop foreman is oiling plant machinery. The foreman worked with several oil companies on looms, spinning frames, and other machines to determine the proper oils to use and the correct oiling methods.

We Have a Lubrication Man

At the beginning of his studies, the foreman used approximately 50 kinds of oils and greases. Now we use only 12 or 15 kinds, and we use the most economical—not the cheapest.

We have a lubrication man who inspects machinery for proper condition. He finds such things as loose or hot bearings, noisy chain drives, etc. He also schedules lubrication. Humidity conditions control lubrication schedules to a great extent.

Many production machines are oiled during the lunch-hour shutdown. Cards, for example, are greased at this time. Cards are also greased when they are stripped by card-room fixers.

Other production machines are lubricated at the beginning of each shift. At this time, each weaver oils certain bearings on his looms. Other schedules also call for 8-hr. greasing. We do some oiling on the third shift, but we don't like to because we like to see the oiling done.

We can't afford to get any oil on

Here's embossing magic!

Miss America 1954,
Miss Evelyn Ay, models a playsuit and skirt by Cole of California, fashioned of "Everglaze" tipped embossed cotton.

Everglaze® cottons . . . made with MONSANTO RESINS

Wonderful indeed are the things they are doing with cotton . . . fabrics that resist wrinkling, that wash beautifully, that stay fresh and neat and lovely for hours longer.

The success of any embossing operation—as with Schreinering or glazing—depends upon the use of the *right resin* in the *right way*. This is why Joseph Bancroft and Sons Company has established rigid standards for its processes . . . and why Monsanto offers a *full line* of resins and catalysts to meet all your embossing requirements.

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THREE-POINT SERVICE

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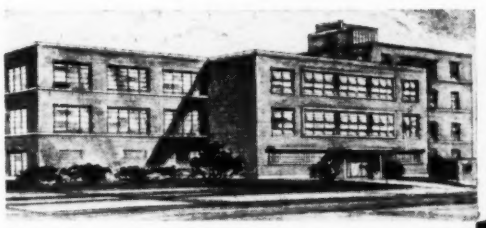
To take full advantage of this Three-Point Service, write or call MONSANTO CHEMICAL COMPANY, Springfield 2, Massachusetts.

Resloom: Reg. U. S. Pat. Office
"Everglaze" is the registered trade-mark of Joseph Bancroft and Sons Company

1 A full line of resins.
This "Everglaze" tipped embossed cotton is one of many effects produced with the help of Monsanto's resins—melamine, or modified urea (Resloom E-50).



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. . . soon to be made even finer by the construction of this new Application Research Center, at Springfield.

3 Experienced technical personnel.
Monsanto people, both in the laboratory and in the field, have had years of specialized practical experience.

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our woven woolen materials, and this condition causes a big problem. When maintenance men see oil on the floor, they tell the supervisor of the production department, and he has the amount of oil used cut down. Then we have to watch out for too little oil.

Now that all lubrication is under the direction of our lubrication man, we seldom have a machine bearing burn out. We pay the man well, and he is worth the money.

Mill Machines Are Serviced

The machine-shop foreman also has charge of many production machines. Looms, for example, are maintained by machine-shop mechanics under his direction. Loomfixers repair breakdowns such as replacing picker sticks, head-motion vibrators, shuttle boxes, etc. Shop mechanics put on lay ends, bearings on main shafts, etc.

One of four trained mechanics inspects looms by a checklist that lists all vital parts, and he turns the checklist over to the weave-room foreman in charge of the particular looms. When a loom needs the attention of a shop mechanic, the weave-room foreman and machine-shop foreman talk over the problem and decide when the loom will be taken from production to fix it.

Other production machines such as spinning frames and cards are inspected by maintenance mechanics trained to fix the machines. The machines themselves—not just motors, starters, etc.—are inspected and serviced by the mechanics.

All loomfixers in the plant are required to work in the machine shop for six months before they become loomfixers. Weavers are taken to the shop and given training in filing, grinding, parts fittings, etc. Then they become loomfixers.

We are setting up a maintenance planning and scheduling program under the direction of our cost-control engineer. The job is a big headache for him right now. You have to be careful in maintenance work to be sure you don't go overboard on time-study. It is important to know if a man is giving a full day's work, but it can go too far.

Our Wage Rate Is High

If a man knows he is supposed to take 2 hrs. to do a job, he may not give the job the quality work needed; and then you are in trouble. The main thing is to get a good day's work out of a man and make sure that it is good work. Having a mountain of paper work to show how

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The revolutionary HYDRATORK DRIVE lift truck is now available in Clark's 3000-5000 lb. Carloader. The new clutchless, torque converter transmission has already won many friends among users of Clark's 6000-7000 lb. Utilitrucs. The basic benefits of this Clark-built transmission are:

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2. More power: faster, smoother get-away, better gradability.

3. Less driver fatique: finger-tip direction control, no clutching or shifting.

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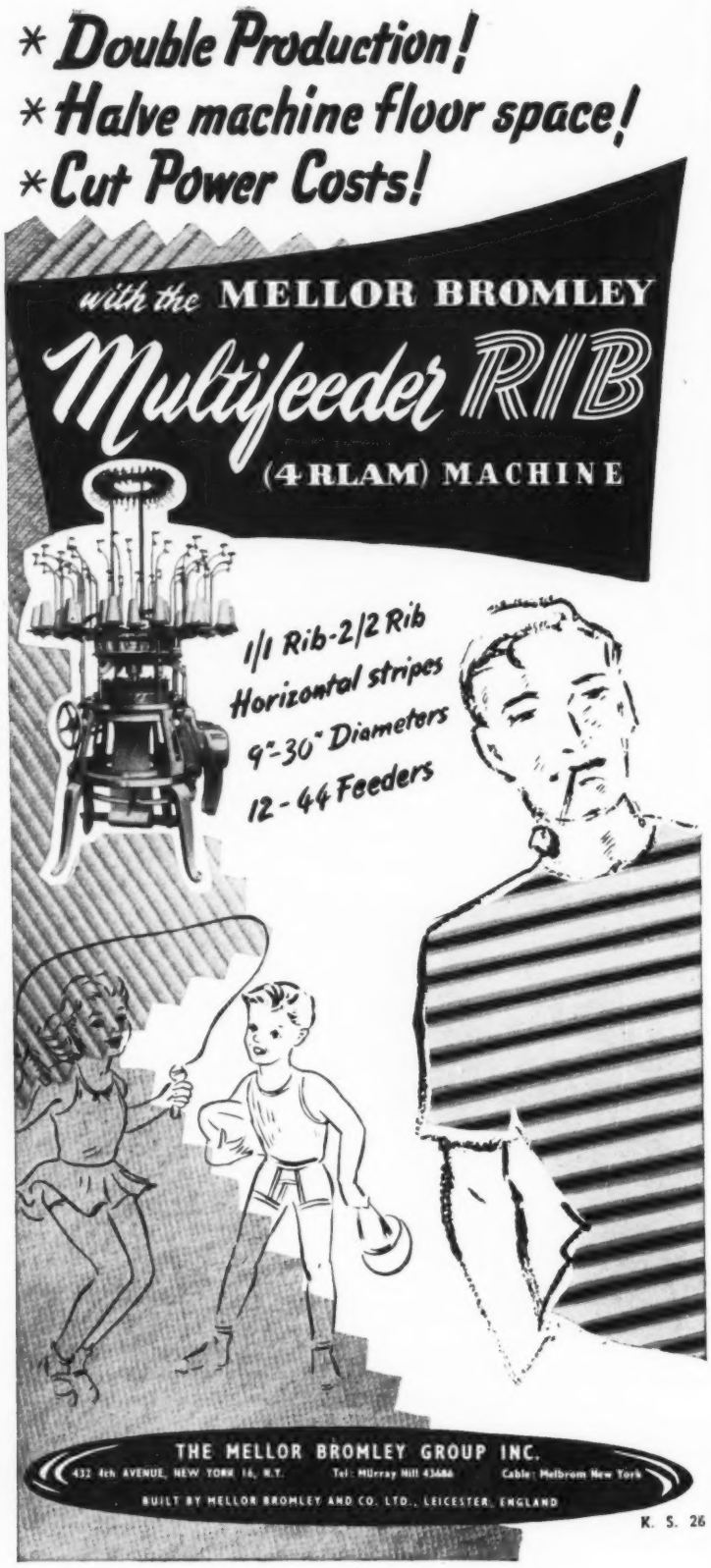
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* Cut Power Costs!
with the MELLOR BROMLEY
Multifeeder RIB
(4RLAM) MACHINE
1/1 Rib-2/2 Rib
Horizontal stripes
9"-30" Diameters
12-44 Feeders
THE MELLOR BROMLEY GROUP INC.
432 4th AVENUE, NEW YORK 16, N.Y. Tel: MUrray Hill 43686 Cable: Melbrom New York
BUILT BY MELLOR BROMLEY AND CO. LTD., LEICESTER, ENGLAND
K. S. 26

much work a man does is not worth the effort.

For example, we think that a certain job may take 4 hrs. If the job actually takes 1¼ hrs., we ask why. If it takes longer than 4 hrs., we look into the job to see if we need to allow more time. Most of our jobs are not repetitive because our machinery is largely of special design.

About 80% of our production employees are on an incentive wage plan, but there is no incentive-wage plan in maintenance. We pay 2 or 3¢ per hr. more than other companies—non-textile companies too—in our area; and our labor turnover is practically nothing.

We try to make our maintenance jobs attractive to our employees. How well we are making them attractive is reflected in our union-membership percentage. About 36% of our mill employees are union employees; only about 10% of our maintenance employees belong to unions.

The key to good maintenance is good supervision. That's why we have a supervisor to every 10 employees. We pay the supervisors well, and we don't need an incentive-pay system or any other type of check-up.

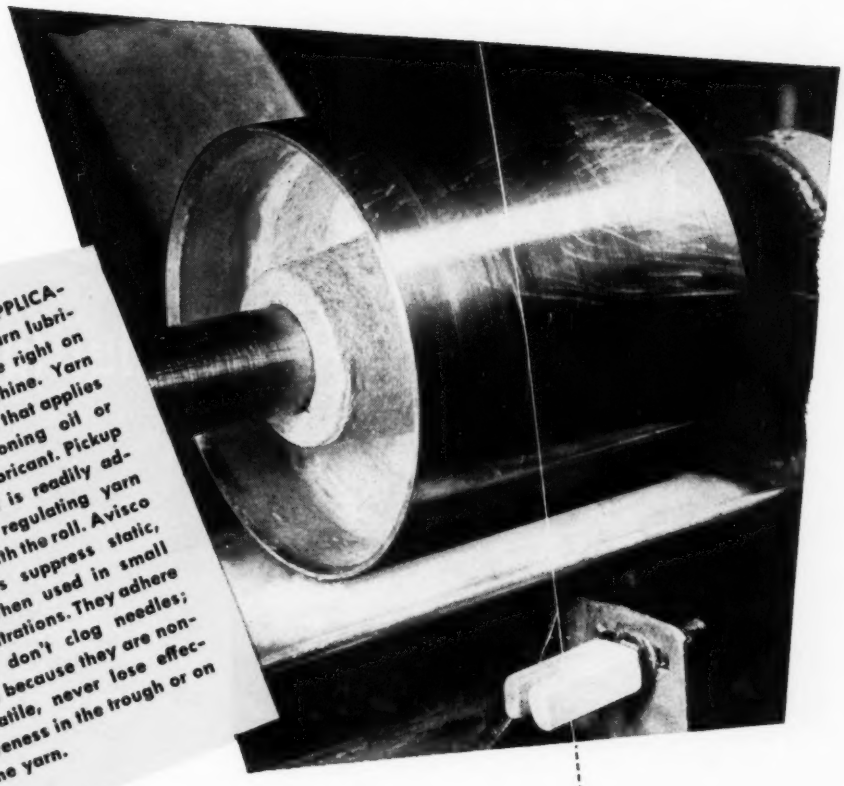
How Work Is Scheduled

Construction work and machinery erection are done by maintenance craftsmen; but repairs come first, and construction jobs are suspended when necessary so that all repair jobs are finished at the end of each week.

Preventive maintenance begins with the chief engineer. Motors, for instance, are grouped into eight or nine groups that have to be checked at different intervals. Group No. 1 might have to be checked weekly, but group No. 9 might need checking only once a year.

The preventive-maintenance data sheets are filed in the chief engineer's office, and his secretary calls jobs to be checked to his attention each week. Then the data sheets are given to the various foremen responsible for inspecting the motors, scales, or other equipment. When the inspection is completed, the sheets are returned to the chief engineer's office.

We don't use a strict budgeting system as budgets are usually used. Maintenance costs at the beginning of the year are no problem. We just have to make an estimate of the cost for the year. For example, if we decide to spend $100,000 for maintenance in 1954, we don't need to worry about spending a few dollars over that amount. But we would have to explain an expenditure of, say, $120,000.



EMULSION ROLL APPLICATION of Avisco yarn lubricant can be done right on the coning machine. Yarn runs over a roll that applies the Avisco coning oil or emulsified lubricant. Pickup of chemical is readily adjusted by regulating yarn contact with the roll. Avisco lubricants suppress static, even when used in small concentrations. They adhere well, don't clog needles; and, because they are non-volatile, never lose effectiveness in the trough or on the yarn.

Knitting efficiency starts with

AVISCO textile chemicals

Send for your copy of this reference booklet—"Avisco Textile Chemicals."

Avisco textile chemicals are developed in cooperation with and are manufactured by the Atlas Powder Company, Wilmington, Delaware.

Got a problem of lubrication, softening or static control? The right Avisco textile chemical can solve all three for you at the same time . . . because these versatile processing agents do a superior, all-around surface treatment job on yarn or fiber.

Avisco chemicals are stable . . . won't wick out, migrate, or evaporate. And they are effective in low concentrations.

Avisco, famous name in man-made fibers, offers a full line of chemicals for processing all types of fiber, natural and synthetic . . . and the application service of its field specialists. Write to Textile Chemicals Division, P.O. Box 455, Marcus Hook, Pa., or Textile Chemicals Sales, 1617 Pennsylvania Blvd., Philadelphia, Pa.

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AMERICAN VISCOSE CORPORATION

America's first producer of man-made fibers

HOW TO KEEP YOUR
FLUORESCENT LIGHTING
AT PEAK EFFICIENCY!

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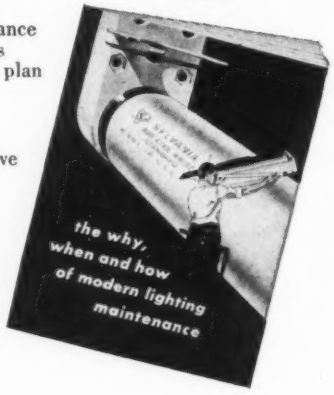
LIGHT FOR FREEDOM
POWER FOR PROGRESS

The high efficiency and unbeatable performance of Sylvania Fluorescent Lamps and Fixtures is now matched by a Sylvania maintenance plan which automatically keeps your lighting at highest levels.

By this plan, your lamps are replaced as a group before burnouts become an expensive nuisance. This modern method (1) saves the maintenance time and labor of individual lamp replacement, (2) reduces costly work interruptions, and (3) assures better light for better production, better morale, and better appearance.

Learn more about this advanced lighting plan. Illustrated folder gives full details. For your copy write to Sylvania Dept. 4L-5205, today!



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LIGHTING • RADIO • ELECTRONICS • TELEVISION

Full-Fashioned Costs

CONTINUED FROM PAGE 79

young girls should be constantly under training. It takes us about six months to train a good seamer.

We have a strict quality-control system in our seaming room. Each seamer is provided with a pair of scissors, a jar of hand cream, and an emery board.

Because we use an automatic inspecting machine for a group of eight seamers, we can check the pull threads made by each seamer. The inspector examines the work of the same eight seamers daily. The faulty work or the number of reseams is posted each day on the bulletin board.

Seamers Are Allowed 4% Faults

We allow a seamer 4% faulty work per week. If a seamer exceeds 4%, a red line is drawn under her name on the bulletin board. The seaming-room foreman and I interview the girl to determine why she has so much poor work. We try to convince the seamers that we are interested in helping them cut down on bad work and increase earnings.

A seamer does not like to see her name underlined on the board. We have warned seamers that three successive 4% reseams will result in a one-week lay-off. So far, we've had no lay-offs.

We helped our seamers by installing the new No. 196467 stitch fingers on our machines. We also find that two ends of Z-twist, 6-tpi., preset yarn and one end of Z-twist, 8-tpi. yarn that is not preset give a cleaner seam in the finished stockings.

Wrapping threads over the ratio control gives a better seam because it helps to run a loose tension and still get a desirable finished seam. We wrap the needle thread eight turns and the looper thread four turns.

INSPECTION

Automatic inspecting machines have reduced our costs and increased production. Our operators like the machines because the work is not so tiring. The operators now inspect 220 to 230 doz. per day vs. 75 doz. by the old system.

First-quality stockings are blown into a bag as they come from the inspection form. When 3 doz. stockings are in the bag, it is moved to the gray-stock room for Dunn-system dyeing. Imperfect stockings are placed in loops sewn to a tape that is stretched across the inspecting machine. The loops form eight compartments, and each loop holds certain imperfections such

New!

VARY-TALLY

Multiple-Unit Reset Counter

DESIGNED TO COUNT ANYTHING COUNTABLE

this new Vary-Tally can be supplied in any combination up to 6 banks high, 12 units wide, with the counting units arranged compactly on stands in tiers. Now check these special features of Veeder-Root design and construction:

- Easily Readable from any Angle . . . Bold Figures Always Centered in Window . . . No Glare . . . Figures not Covered by Fingers in Operation
- Easily Portable, yet Ruggedly Built for Long Wear
- Separate Counting Units Can be Rotated like Tires on a Car, to Distribute Wear Evenly
- All Parts Corrosion-Resistant
- Working Parts of Hardened Steel
- Operation Not Affected by Extreme Heat or Cold
- Individual Tag Above Each Counter-Window — Not Strip Tabs
- Veeder-Root Quality in Every Part

Now what's on *your* mind, that Vary-Tally can help you count? Write for news sheet and prices.

"The Name that Counts"

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Box 297, Tel. Greenville 3-1371

VEEDER-ROOT INC.

HARTFORD 2, CONNECTICUT
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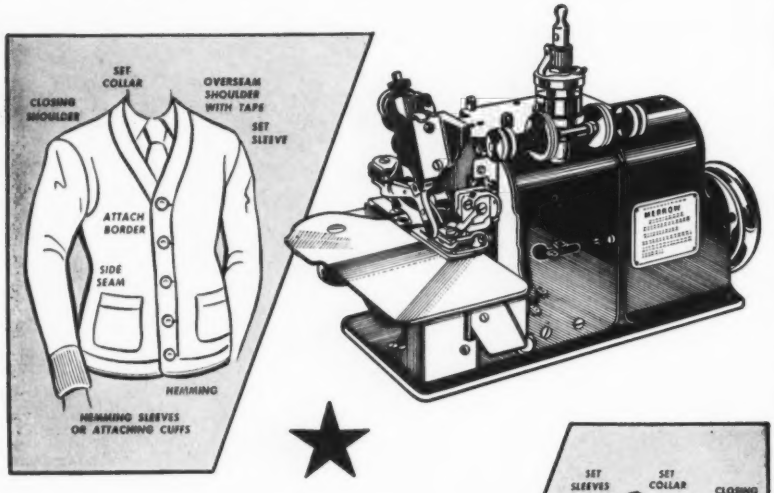
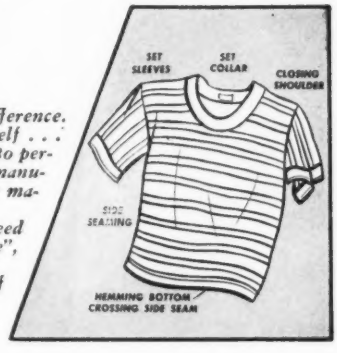
Mr. Outerwear Manufacturer:
MERROW CLASS A MACHINES
Can Boost Your Production



It's their versatility that makes the difference. "Merrows" don't collect dust on the shelf . . . their flexibility enables the same machine to perform a variety of operations. To you as a manufacturer this means higher production per machinery dollar invested.
Simplicity and rugged design of high speed Merrow Machines mean minimum "down time", provide you with a bonus in production.
We will be glad to demonstrate the work of these machines on your own garments.



In outerwear manufacturing, Merrow Class A Machines are extensively used on: polo shirts, sportswear, children's and infants' wear, bathing suits, sweaters, trousers and knit dresses. They are used on a wide variety of materials, including woven fabrics, knit fabrics of various construction, cotton, wool, rayon, nylon and other synthetics.
Applications of Merrow Machines include overseaming, hemming, overedging, serging, crochet and shell stitch edge finishing and shirring. Guides are available for attaching tape, cord, elastic, lace, borders, collarettes or rib material.

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TRADE MARK REG
The MERROW MACHINE COMPANY
ESTABLISHED 1838 INCORPORATED 1905
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as pull threads, menders, reseams, waste, thirds, odd reseams, latch menders, and knitter menders.

The last bag in the knitter lot contains the tape with imperfect stockings and extra odd stockings. This bag goes to the pin-rack department, and the odd good stockings are eventually made into complete dozens. The imperfects in the tape are returned to the person concerned.

Inspectors' Work Is Checked

One gray inspector uses a flat hand-operated form to double check a 9-doz. lot from each machine inspector every day. Each inspector is allowed up to 1% faulty work. A red line is drawn under her name on the bulletin board if the 1% is exceeded.

This system works like the seamers' system. We try to find out why her bad work was exceeded. To date there have been no lay-offs of inspectors.

Dunn-system boarding has helped us to keep costs down by reducing pull threads. We knit a tight welt with a 7-tpi. welt yarn. This special yarn gives added shrinkage in the retort to make the welts hug more tightly.

Cotton Testing

CONTINUED FROM PAGE 109

Trash Content

We use the Shirley Analyzer to check the percentage of lint in our motes and the percentage of trash in our picker laps. We check one line against the other periodically or when we notice laps that appear dirty.

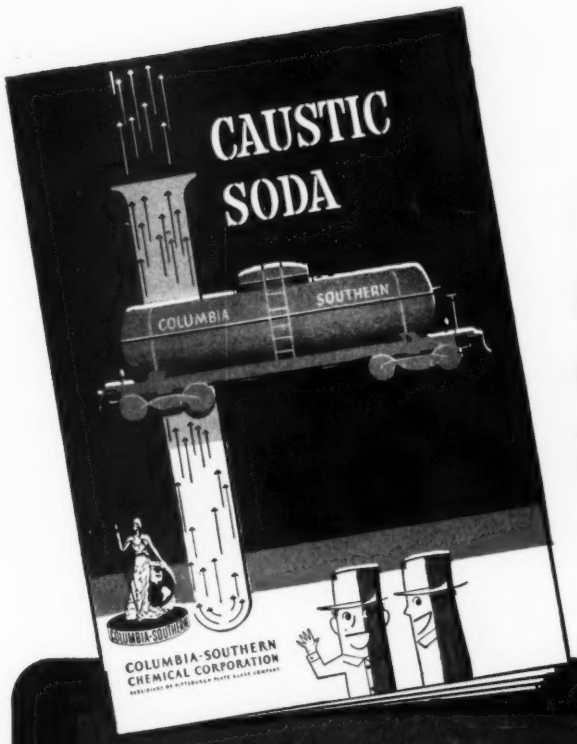
Maturity

We have only recently started to make tests for maturity, and we have therefore not completed our procedures. We are using the Causticaire method and test a composite sample of the bales in the opening room daily.

Maturity averages 77% so far this year vs. 87% last year. The 77% is just above the average on the instrument scale, in the Mature classification, while the 87% last year was in the Very Mature range on the scale.

Length

We bought a Servo Fibrograph recently and find that the machine classes a little on the long side but is consistent in its results.



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Yes ☐ Also, please send me a copy of your new booklet, "The Economics of Caustic Soda."

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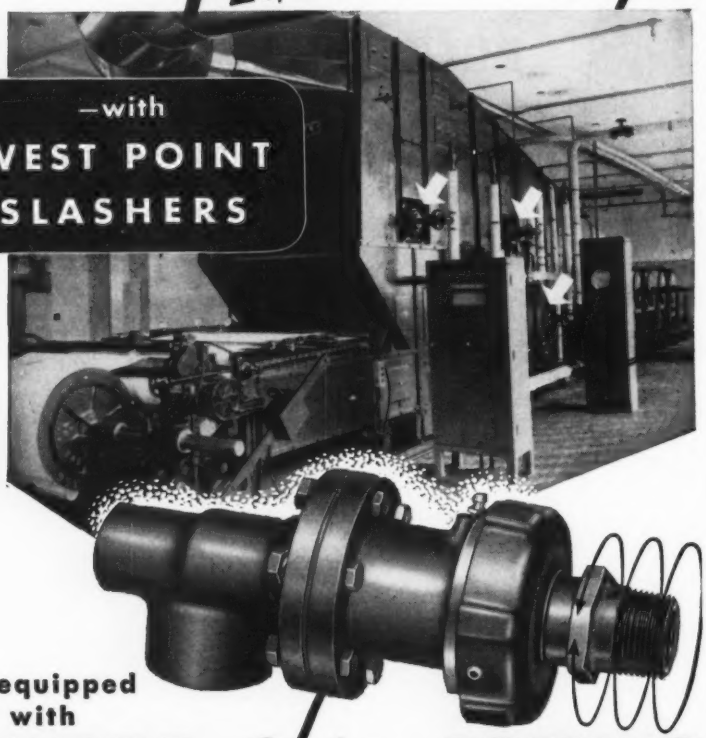

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BARCO *Revolving* JOINTS

- Trouble-free Performance! Thanks to long lasting "CTR" V-Type Seal Rings—a Barco Development.
- Free-Floating, Low Torque Installations. Cuts Power Costs up to 50%.
- Unexcelled Ability to withstand Vibration and Hard Usage.
- Better Temperature Control where steam is used for heating rolls due to better circulation.
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THE name "West Point" stands for carefully engineered designs and faultless performance in textile mill slashers everywhere. With West Point, as with other leading manufacturers, one key factor in performance is the selection of Revolving Joints.

To provide *trouble-free* rotating connections for steam supply and condensate drainage, West Point Slashers are regularly equipped with Barco Revolving Joints—*as indicated in the above installation.*

Let us send you complete information about Barco's new *improved* Type IBR Revolving Joints for Textile Machine Dryers, Slashers, Dry Cans, Sanforizers. *Catalog 300 on request.*

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BARCO— *THE ONLY TRULY COMPLETE LINE OF FLEXIBLE BALL, SWIVEL, SWING, AND REVOLVING JOINTS*

Dope-Dyed Fabrics

CONTINUED FROM PAGE 87

the cooking kettles. Other controls are nearby against the wall, too, so that nothing interferes with the slasher operators in reaching their work.

Push-button start-and-stop controls for the slasher are placed on each side at the front of the slasher, at the back, and also at the creel so that the slasher tender or back man can stop or start the machine when necessary.

The slasher creels were built by Haynsworth's maintenance department.

The drawing-in department is between the warper and slasher rooms near the entrance to the weave room. There's no lost motion or lost time in moving drawn warps or tie-backs to the weave room.

The Number of Looms Is Steadily Increasing

The original Haynsworth building of 60,000 sq. ft. is now used entirely for the weave room.

At present, there are 575 50-in. XD Draper looms equipped with dobbies. One hundred C&K S-6 60-in. dobby looms have just been placed in production.

The S-6 looms have the 4x1 box-motion attachments. The two shuttles run in the two top shuttle boxes have the filling changed automatically by the bobbin-changing magazine. When the filling is exhausted in the two shuttles in the two bottom shuttle boxes, the loom stops and the filling is changed manually. With this arrangement, most fabrics are woven 75% automatically.

The looms can also be run fully automatically on 2x1 weaves. On weaves of this type, the loom speed is increased.

The weave room will house a total of 700 looms when present plans are completed.

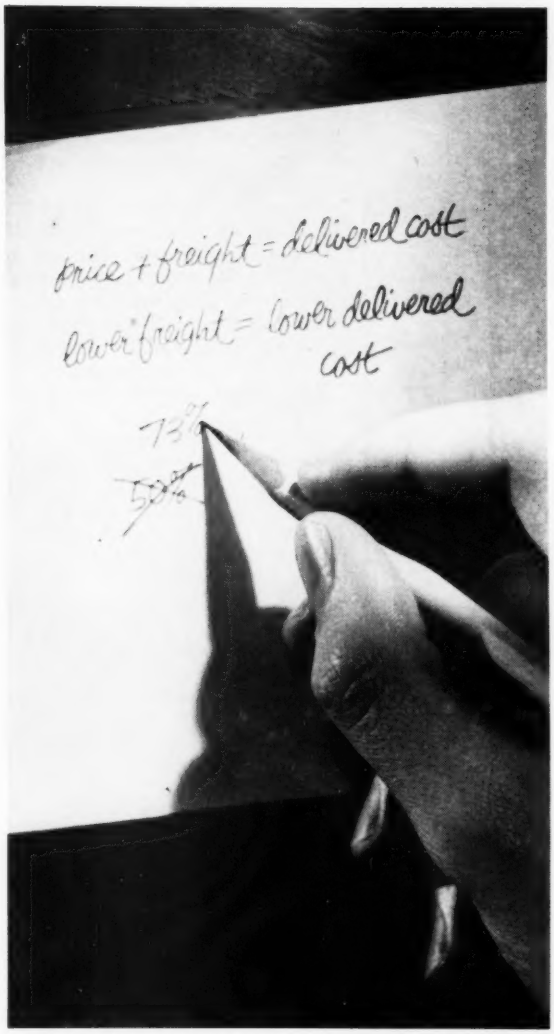
Fabrics woven are taffetas, satins, lenos, sheer nylons, plaids, and stripes, all in dobby weaves. Present cloth production is 350,000 yds. per week.

Good Cleaning Is Required In Weaving Dope-Dyed Fabrics

Dope-dyed fabrics comprise a large portion of the fabrics being woven now. In general, production methods used in processing yarn and weaving these fabrics is not different from methods used to weave most rayon or acetate materials.

In slashing, a spot-resistant size is used.

The greatest attention, other than the normal care Haynsworth gives to



THE ECONOMIES OF 73% CAUSTIC SODA SOLUTION are no longer reserved for the largest users . . . lower shipping costs now make it the best form for you, too.

73% CAUSTIC SODA . . .

a little figuring may prove it your best buy!

FAST, DEPENDABLE DELIVERY of uniform 73% caustic solution is assured through use of Dow-owned tank cars. These 8,000- and 10,000-gallon cars are insulated, protectively lined, and fitted with nickel heating coils; unload from top or bottom by air pressure or pump. Frangible discs, protective plug cocks are two of the advanced safety features.

How long has it been since you have checked your caustic buying habits in the light of increasing cost factors? Higher freight rates are erasing the savings in 50% caustic solution for more and more users every day. Even users located near shipping points save money with 73%, since the higher price of even shorter distance hauls quickly wipes out the price difference between 73% and 50%.

73% caustic must be diluted when received, but most caustic users dilute 50% solution, too. The cost of additional handling equipment for dilution, when fairly amortized, becomes a small item in comparison to your over-all cost reduction.

If you are still buying 50% caustic solution, discussion in your plant and consultation with our Alkali Technical Service is indicated. Perhaps the comprehensive Dow Caustic Soda Handbook can help you in preliminary discussion. Ask your Dow sales representative for your free copy or write to THE DOW CHEMICAL COMPANY, Dept. AL 901E, Midland, Michigan.

you can depend on DOW CHEMICALS DOW

...to get this RAW MATERIAL ADVANTAGE

Chemicals, Paper, Textiles, Metalworking, Canning—industry of all types is flocking to the industrial Southeast where profits come easier—where raw materials (see below) are in their back yards.

Beside raw materials, here is a booming market of 28 million people with money to spend; plenty of intelligent, willing workers; fast, dependable transportation; ample power and water; a climate practically snow-free. And here is a bank that will help you find the one best location, *and* help you finance your re-location: The First National Bank of Atlanta, large enough to serve your every need.

First National's Industrial Location Specialists are ready to go when you say the word, searching out the location that best combines the Southeast's advantages to *your* advantage.

Write today. *All inquiries held in strictest confidence. Address Business Development Department, The First National Bank of Atlanta, Atlanta, Ga.*

SOME RAW MATERIALS AVAILABLE IN THE SOUTHEAST

Trees, Lumber and Forest Products			Talc
Marble	Iron Ore	Kyanite	Limestone
Cotton	Cement	Slate	Gold
Feldspar	Coal	Sea Products	Fuller's Earth
Mica	Peanuts	Naval Stores	Barytes
Granite	Soybeans	Ochre	
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Graphite	Bauxite	Agricultural Products	

...in Business for your Business

(Capital Funds in Excess of $22,000,000)

manufacturing most fabrics, is given to keeping yarns and woven cloth clean.

For example, in loom oiling, schedules are arranged to place just the proper amount of oils and greases on the looms without having an excess to soil the cloth.

Looms are thoroughly cleaned at each warp out. They are cleaned with a solvent, brushes, and rags and are also blown off with compressed air.

Reeds and drop wires are cleaned with a solvent at each cut mark. Special cleaning is given the reed cradle and shuttle boxes at this time.

Reeds are thoroughly cleaned on a Greensboro Loom Reed Co. reed-brushing machine when they are removed from the looms at ends of warps.

The binders on the left-hand end of Draper looms are covered with flannel to protect the filling, and the flannel is changed once each week.

No cut marks are used on the warps. Cloth is doffed at 80- to 100-yd. lengths and is measured with a wood gauge.

The cloth is not marked at shift changes. Ordinarily, on other materials, a stamp is used to mark the cloth to show which shift is responsible.

Good Maintenance

CONTINUED FROM PAGE 101

be required for production and are available for major overhauls.

The maintenance mechanic who makes these inspections indicates his findings on the charts and also fills out a machine-inspection and maintenance report. This report is given to the maintenance manager, and he determines what further action is necessary.

In certain instances, the only time major repairs can be made is during the two-week plant vacation period.

The chief operating engineer, who is in charge of the boiler house and aid-conditioning equipment, schedules his own maintenance work. His department operates on a budget that covers all labor, material, fuel, and supplies used in the department. This department does most of its own maintenance work. But when it cannot handle a project, an order is issued to the maintenance department for additional services.

Catch Equipment at Shutdowns

Coal is our chief fuel, and we use 5,000 tons each year. We burn gas in the summer. This arrangement gives us a good chance to schedule maintenance of boilers during the sum-

TRITON GR-5

THIS NEW WETTING AGENT

ALSO GIVES YOU HIGHLY

EFFECTIVE REWETTING

EVEN AFTER PROLONGED

FABRIC STORAGE

TRITON GR-5 is not only soluble in water in all proportions but is stable—particularly to lime and magnesium salts—and electrolytes. And TRITON GR-5 is economical, too. But that's only half the story.

TRITON GR-5 is an excellent *rewetting* agent. It wets back after it has dried into the fabric, permitting high absorption under normally difficult conditions, and maintaining fabric absorbency through prolonged storage.

What's more, TRITON GR-5 puts a real sales feature into towelings. They are extra absorbent *when new*—don't need usual pre-use washings housewives complain about.

CONSIDER THE SPECIAL FEATURES OF THIS ECONOMICAL NEW WETTING-REWETTING AGENT; THEN CALL YOUR NEAREST ROHM & HAAS OFFICE.

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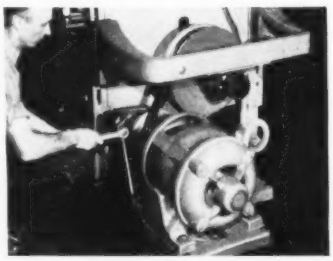
VARI-SPIN DRIVE

●Now you can obtain new versatility, greater speed flexibility in your spinning frames . . . completely eliminate belt changes and pulley changes . . . cut downtime to an absolute minimum . . . simply by installing REEVES new Vari-Spin Drives using your present NEMA frame motors! REEVES Vari-Spin Drive gives you complete speed adjustability to provide the exact spinning speed you need for any yarn set without stopping the frame . . . *completely eliminates old-fashioned trial and error methods of "hunting" for exact speeds* . . . all in one compact unit which nests in narrow aisles!



TURN OF A SCREW changes spinning speed. Speed changes are immediate and positive . . accurate to a fraction of an rpm.

Send today for new Vari-Spin Bulletin W6-S-1

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

mer months. Gas equipment and controls are serviced during winter months. Heating equipment throughout the plant and offices is scheduled for maintenance during the summer.

Three interconnected refrigeration machines with a combined capacity of 900 tons are used for air conditioning in the summer. Some plant processes call for air conditioning all year, but we generally handle maintenance of these machines at our convenience during the winter.

A plant services manager is responsible for cleanliness, floor maintenance, painting, and the grounds. He handles wall and ceiling washing in the office.

He also has charge of cleaning light fixtures in all buildings. We haven't adopted a program for group replacement of fluorescent lamps yet. But we date all our tubes; and when we clean fixtures, we replace any tubes that indicate they have reached their normal life expectancy.

Painting Is Scheduled

Painting is a good example of scheduling that works at our plant. A painter's area-data sheet is kept on file and gives the complete history of each paint project. The sheet shows the area painted, the cost of labor, and the quantity and cost of materials.

Another area-planning sheet shows areas that have been painted, areas that can be painted during normal working hours, areas that must be painted at night, and areas that can be painted only during the plant vacation period.

Painters are given a job ticket to guide them in planning their work.

All costs of building paintings are charged to a building-maintenance account. The building superintendent has charge of the account. If a production-department manager wants to have painting done in his area before it is scheduled, it is charged to his budget.

All machinery and equipment painting is charged directly to the production department where it is located.

Roofs Are Inspected

Roof repairs are an important part of our building maintenance. All our roofs are the flat, built-up, tar-and-gravel type. We keep a record of installation dates, guarantees, and types of repairs made.

Roofs are thoroughly inspected each spring and fall for blisters, drying out, and loose gravel. Parapet-wall flashings are checked for open joints, loose caulking, and holes caused by physical damage.

We are preparing a maintenance

For more information, write direct or use Reader Service post card.

The answer to most of your questions about stainless steels are right at your finger tips, when you use Crucible's unique new Stainless Steel Selector.

Want to know the machinability characteristics of a stainless grade? Resistance to corrosion or scaling? Physical or mechanical properties? You can get the answers to these and other questions simply by setting the arrow on the Selector slide at the proper window. It's just as quick and easy as that.

And almost as fast as you get the answer, you can get the steel you need. For many of the REZISTAL stainless steels shown on the Selector are carried in stock in Crucible warehouses conveniently located throughout the country.

To get your free copy just fill in and mail the coupon. Better do it now.

HOW THE SELECTOR WORKS:

Start with the problem. For example, resistance to corrosion in contact with copper sulfate. Just set the slide at the proper index number shown on the Selector (in this case on the back), and you have the answer in a second -- grades 302 and 316 are fully resistant to this form of attack.

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Dept. TW, Henry W. Oliver Building
Pittsburgh, Pa.

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CRUCIBLE first name in special purpose steels

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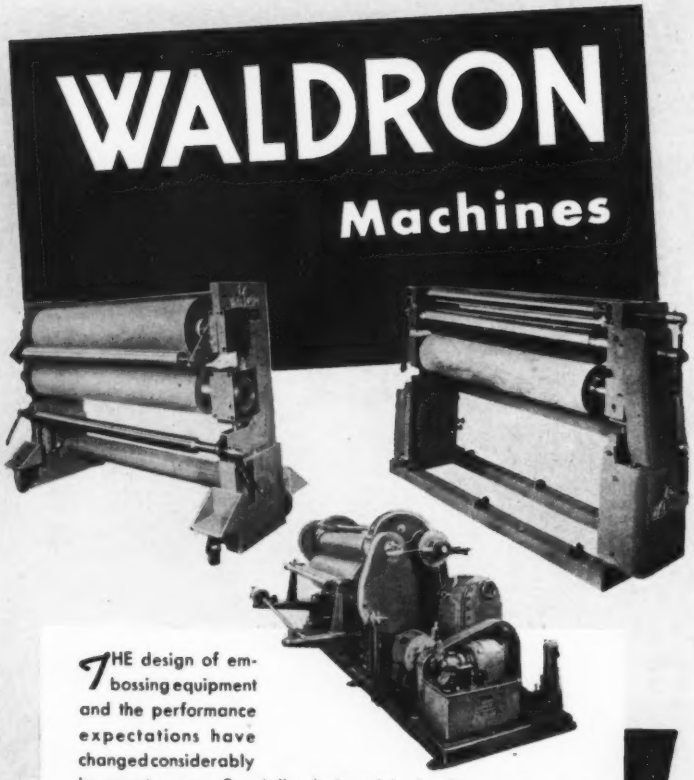
CRUCIBLE STEEL COMPANY OF AMERICA, GENERAL SALES OFFICES, OLIVER BUILDING, PITTSBURGH, PA.

REX HIGH SPEED • TOOL • REZISTAL STAINLESS • MAX-EL • ALLOY • SPECIAL PURPOSE STEELS

The NEW In Equipment For
TEXTILE EMBOSSING

WALDRON
Machines



THE design of embossing equipment and the performance expectations have changed considerably in recent years. Specially designed hydraulic pressure embossing units are furnished for textile embossing applications in any width or size from laboratory scale to 110" width. Design features include arrangements for rapid roll interchanges, independent hydraulic pressure system for control of nip pressure, and variable speed motor drives. Equipment is also furnished either with pneumatic pressure application or with screw type pressure application when desired. For many applications spherical roller bearings are used on the embossing roll journals. Embossing equipment is furnished either with WALDRON paper matrix rolls, rubber matrix rolls, or mated hardened steel rolls. Special inking attachments are constructed for ink embossing or color inlay by the WALDRON "Embrocade"® process.

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manual to cover all phases of maintenance on physical properties. Each member of the maintenance organization will be given a copy of the manual, and it will be used as a guide in performing each person's work.

The purpose of the manual is to set up standards and procedures for each type of physical property; and it will show not only how the types of property should be maintained but also what materials to use. The names of original contractors will be listed for reference purposes.

However, the manual will not attempt to cover every type of equipment, because maintenance instructions for individual types of equipment are given to the employee who must maintain that equipment. We believe the manual will take the guesswork from making repairs.

Checklist Used for Expansion

Our building was originally laid out with the idea of making future expansions. When we make those expansions, we now follow definite procedures. The procedures are:

1. The building superintendent or master mechanic makes a survey to determine space requirements and submits a recommendation.

2. Every person concerned with the proposed new building is contacted to get his idea of the space requirements.

3. Floor plans are prepared to show locations of machines, equipment, and service necessities.

The master mechanic and building superintendent get together again to determine the best location for the building, the type of structure, etc. In making these selections, they consider the flow of work and the accessibility to other operating departments.

They also consider the availability of services such as steam, electricity, compressed air, water, sewers, etc. The building location must fit into the long-range planning picture so that it will not interfere with future expansions.

Then, a preliminary estimate is made and submitted to management for tentative approval. When approval is obtained, an outside architect is called in to make working drawings. The architect works closely with the master mechanic and building superintendent in preparing all plans and specifications.

4. A realistic estimate is prepared and submitted to management for approval. The approval is in the form of authorization for a capital expenditure. All future charges are made against this authorization.

5. Before any contracts are awarded,

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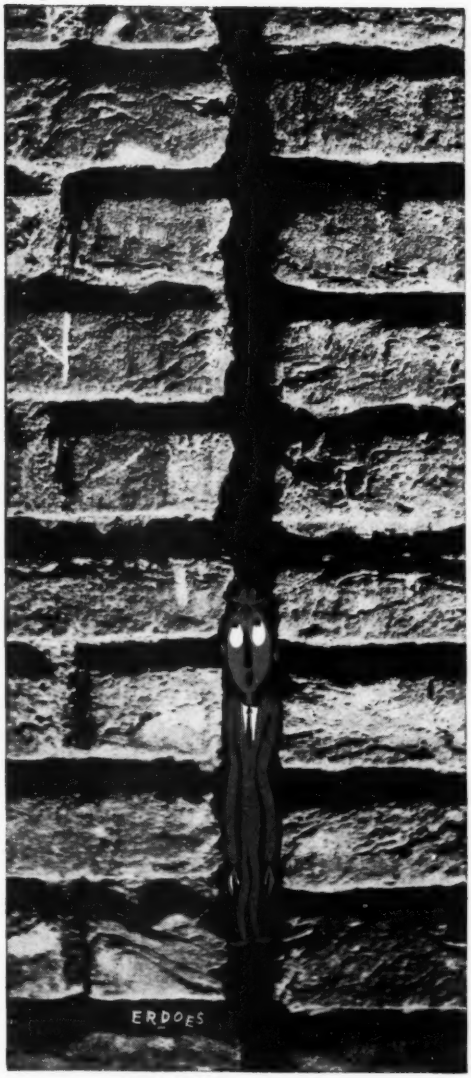

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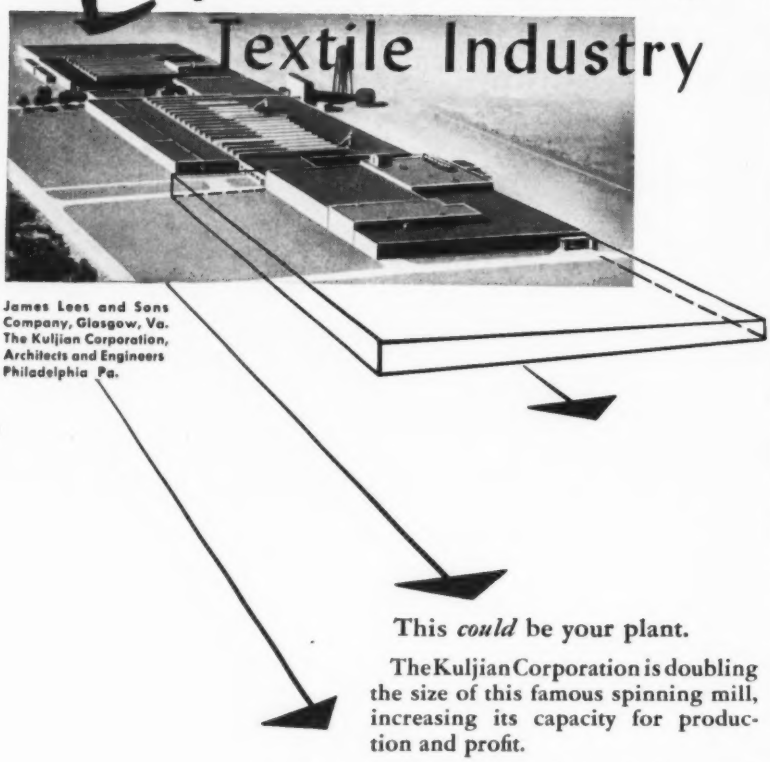
Expansion in the Textile Industry



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The Kuljian Corporation is doubling the size of this famous spinning mill, increasing its capacity for production and profit.

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Backed by years of experience in many diversified industries, The Kuljian Corporation offers you the following services:

- **ENGINEERING** — Preliminary studies and layouts followed by complete detailed working drawings and specifications; the services of a resident engineer during construction are optional.
- **CONSTRUCTION** — Management of the over-all project including coordination of all sub-contractors and all directly employed field forces; accounting and purchasing services are optional.
- **ENGINEERING AND CONSTRUCTION** — Both of the above services on a single contract with unified responsibility for the project from preliminary studies to completed construction.

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the plans are reviewed by the safety engineer, plant services and security manager, maintenance manager, top management, and any other people who have a particular interest in the project. When all people interested in a project cooperate in the planning, many good ideas vital to operations are incorporated into the structure. If everything is left to the architect, a good-looking and structurally sound building may result, but it may be a continuing headache to maintain.

6. The plans are sent to selected contractors for bids, and contracts are awarded. The selection of contractors is as important as the selection of the architect because price alone cannot be the determining factor in obtaining a suitable building.

7. The building superintendent and the master mechanic maintain strict supervision all during construction; and through coordination of their efforts with those of the architect and contractors, a building results that makes maintenance a pleasure instead of a headache.

Inspecting 300 Looms Hourly

CONTINUED FROM PAGE 71

Step No. 4

If the pick counter is placed on the battery end of the loom, look at it next. A glance will show the operating efficiency for the various shifts. Before making the inspection, roughly figure the expected number of picks for each shift so that any great variation can be quickly noted.

(You will notice that there has been no sudden shifting of the eyes, no necessity of focusing on near and distant objects. There has been only a natural movement of the eyes from the quill box to the thread cutter, to the battery, and upward to the counter.)

Step No. 5

Move forward a step and at the same time drop the eyes downward for a look at the right-hand filling-motion hook and fork. Look for any erratic movement. See if the filling-fork grate is clean. Look at the right-hand temple, the temple thread cutter, and the selvage. Look for cloth defects such as jerked-in filling, curled selvage, stringy selvage, overshots, and undershots.

Step No. 6

Slide the tips of the fingers over the cloth and, by feel, detect any unusual roughness of the cloth. Too much

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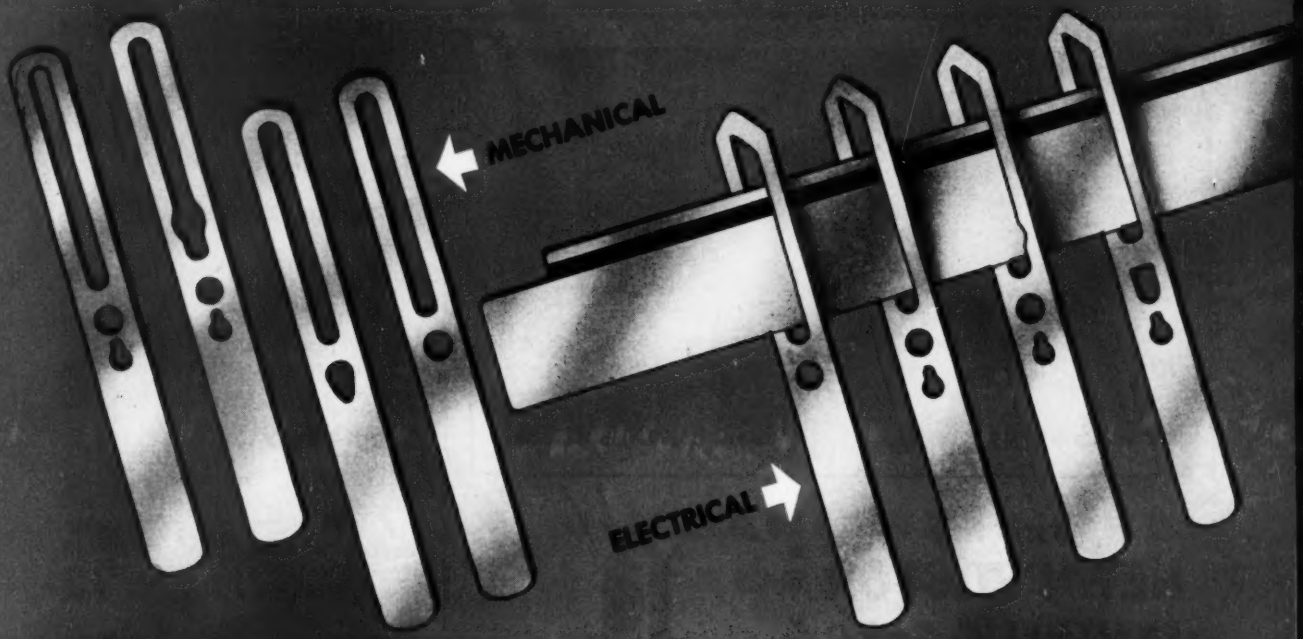

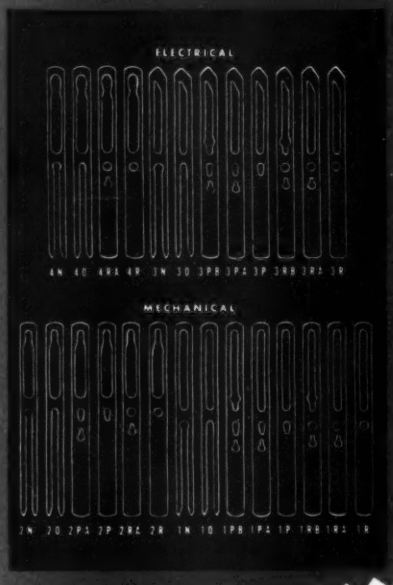

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Large stocks on hand guarantee prompt delivery of STEHEDCO Supreme Quality Drop Wires in all weights for all sizes of Warp Yarn, supplied in galvanized, copper, nickel finish and stainless steel.

STEHEDCO facilities are more than adequately prepared to serve those mills requiring such services as refinishing *Old Drops* or repunching them for use with Drawing-in machines.

STEHEDCO Electrode Rods are made of Stainless Steel with Fibre Insulation and may be had with special plastic insulation of high dielectric strength, for use with electronic or other sensitive relays.

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When ordering Drop Wire, Mechanical or Electrical, furnish sample or use the diagram illustrated. (to left) Designate style, Width, Thickness, and Finish desired.

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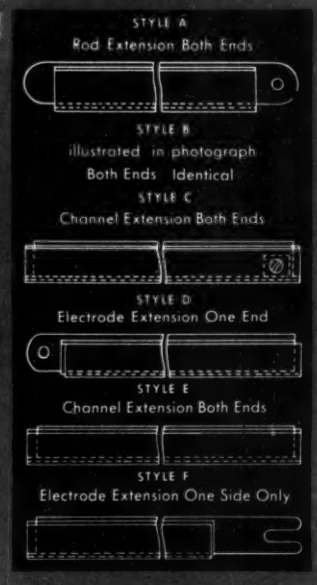

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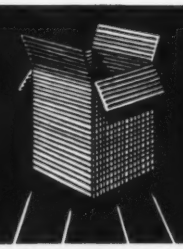

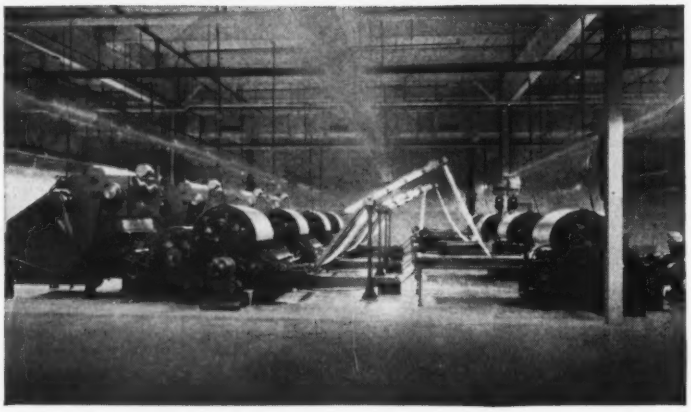

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ASK TO SEE "Short Cut to Fine Yarn", 15 minute sound color film which shows this new system in operation in one of America's leading textile mills. We'll ship the film for a showing in your own plant—at your own convenience. No obligation. Also ask for Bulletin # 396.

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size, imperfect hand, rough yarn, slubs, coarse warp threads, and other imperfections can be found this way. At the same time, check the warp tension to see if it is too tight or too slack.

Step No. 7

Visual inspection of the cloth should be made at the fell of the cloth. Missing warp threads, double threads, and misdraws are easily detected here. A glance at the exposed cloth will disclose kinky filling, broken picks, thin places, and other defects if they are present.

Step No. 8

Now take one or two steps backward (the distance depends on the length of the loom). Inspect the loom on the left in exactly the same manner as the first loom except that the steps and motions are made in reverse order.

Step No. 9

Check each item: left-hand filling-fork grate, filling-motion hook and fork, and left-hand selvage and temple. Inspect the cloth, right-hand selvage, temple, temple thread cutter, filling-fork grate, and filling-motion hook and fork.

Step No. 10

Inspect the pick counter if it is on the right-hand end of the loom. Drop the eyes downward for an appraisal of the battery and its contents, look at the Stafford thread cutter, and inspect the contents of the quill box.

Proceed to the next loom and repeat the procedure.

Tricot Ideas

CONTINUED FROM PAGE 77

replenished by one girl. She uses regular overhand knots and pulls the tail off but leaves 3 ins. of the tail to safely tie the yarn to the new package.

One operator looks after two Reiner warpers. The machines have yarn-oiling attachments devised and fitted by the mill. A metal roll runs in a trough kept filled with Ortholube oil.

The roll is driven in a direction opposite to the yarn travel by a chain and sprockets from a reduction gear on a ½-hp. motor. The roller speed controls the amount of oil transferred to the yarn and is altered to suit the mill's needs by a change in sprocket sizes. A take-up sprocket on a spring-controlled bracket allows a flexible arrangement of gears.

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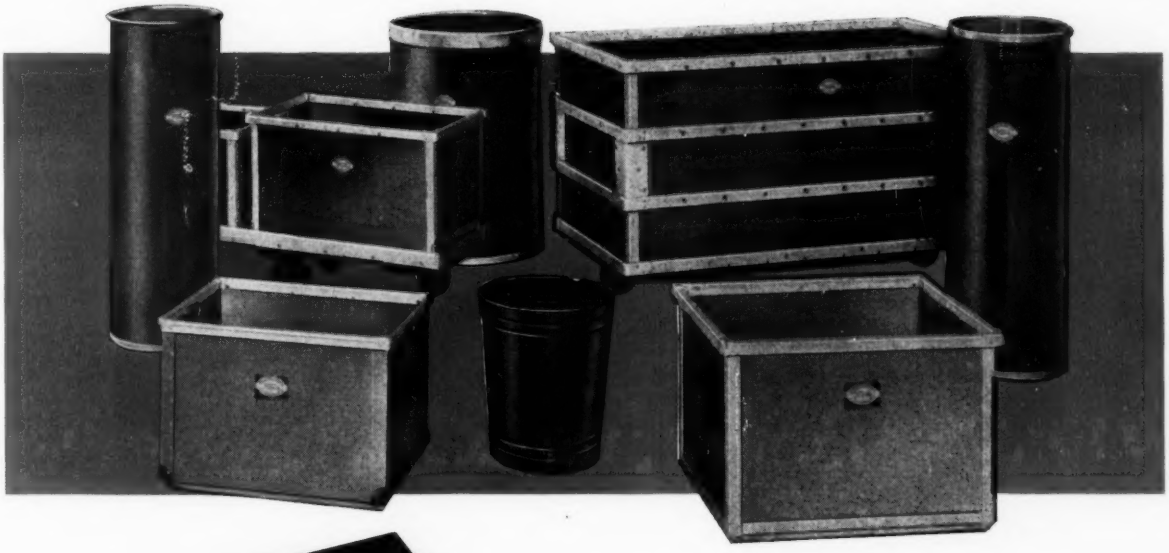

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Available as boxes, barrels, baskets, cans and trucks in a wide range of sizes.

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Removing Tar Spots

CONTINUED FROM PAGE 97

chamber, valve, and control pedal for compressed air. This unit makes it possible to completely remove all residual solvents from lightweight fabrics after spot removal.

The applicator gun for these units can be obtained with or without a brush. An attachment to apply liquid from a supply tank is also available.

One solvent formulation found very effective is (parts by volume)

4 Monopole oil
1 isopropyl alcohol
95 tetrachloroethane

A solution of one part Monopole oil and nine parts of tetrachloroethane also works in some cases. Xylene should be used instead of tetrachloroethane on blends of cotton with acetate.

Unfortunately it is impossible to readily differentiate between tar spots and leaf or seed-hull fragments in a fabric, and an attempt to remove all black particles increases spotting cost to where it is not economical.

The spotting chemicals must be easily removed before dyeing or resin treating, or spots or soft areas may result.

Tar spots can be removed from bleached fabrics by padding with a soap emulsion containing a large proportion of organic solvents. After a rest, the fabric is washed with soap and hot water in a slack rope washer. This procedure is effective but costs about 1.5¢ per yd.

The Pressure-Kier Method

Charge the kier with four tons of cloth, add 1% caustic soda, and pour in a mixture of 18 gals. sulfonated oil and 50 gals. xylene. Circulate the liquor, close the kier, and raise pressure as usual. Close the relief valve as much as possible to prevent loss of the xylene, but allow excess air to escape.

Wash with warm water after the boil. Wash in cool or cold water and bleach. About 85% of the tar spots will be gone. If a hot (140 to 160° F.) wash is given, about 95% of the spots will be gone.

The kier pump and lines should be thoroughly cleaned before the run because of the organic solvent, xylene. Graphite packing in the circulating pump should be replaced with caustic- and solvent-resisting packing.

If graying is a problem after a peroxide bleach, pass the fabric through acid and bleach lightly with hypochlorite.

Chemicals for the sulfonated oil-xylene pressure-kier method cost less than 2 mills per yd. on 4-oz. cloth.

Another formulation found equally effective in the pressure kier uses part pine oil and costs only 1.5 mills per yd.

The Quench-Box Method

Fill the quench box to the normal running level with 0.5¢ caustic heated to 150 to 160° F. Don't add soap or any surface-active agent. On the surface of the hot caustic put a ½-in. layer of one part pine oil and nine parts kerosene.

Start the singer, and meter the oil-kerosene mixture into the quench liquor (with a valve) at about 7 gals. per 1,000

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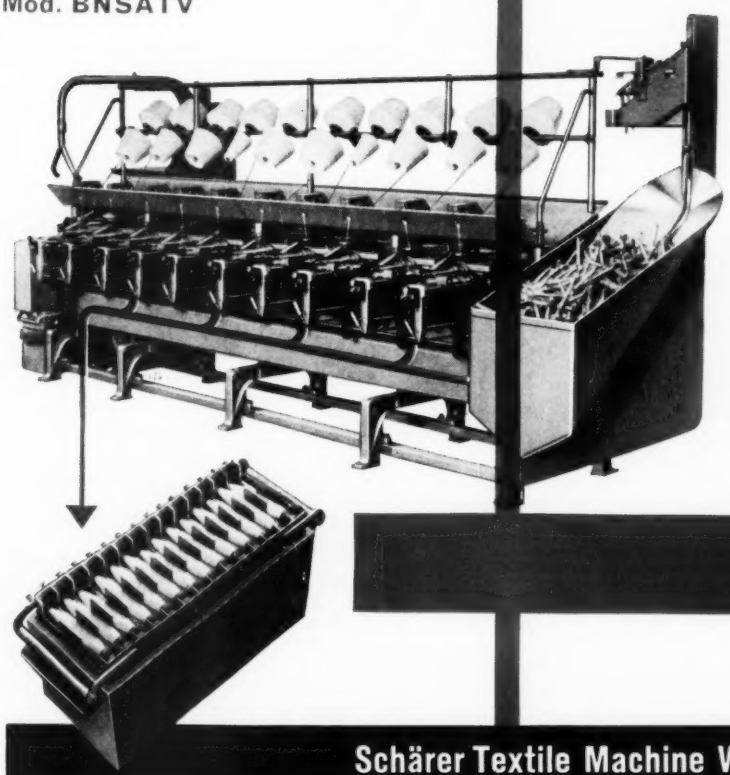

Fully automatic pirn winder for automatic pirns, with automatic feeding of the empty pirns, swivelling creel for two supply packages, dust removing device and automatic stacking of the wound pirns. Most efficient machine for mills with a standardized production, suitable for winding speeds up to 8000 revolutions per minute. Great reliability of the machine is highly appreciated by all clients.

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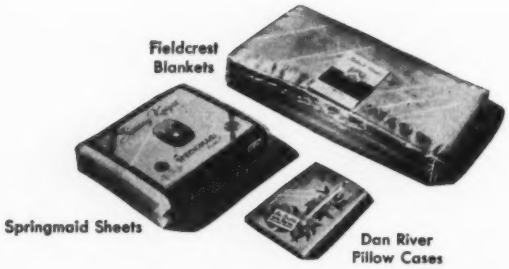

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No complicated adjustments from size-to-size on a Hayssen. No gears or sprockets to remove or change . . . no need for expensive mechanics to change size, either. So simple the operator does it on the job.

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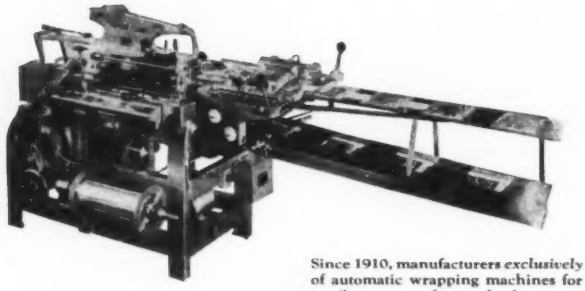

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lbs. of fabric. On 80x80 print cloth, this amount is about 1.7 gals. per 1,000 yds. Maintain the caustic level as usual.

Use a normal nip-roll pressure to get a pickup of 60 to 70% of the treating liquor. Run the treated fabric into a gray bin and rest for 4 hrs. Then give a continuous hot-water wash at 160 to 180° F.

Follow conventional finishing procedures after the above treatment. The fabric can go through acid and be kiered, or it can be put through a continuous boil-off and bleaching range.

Laboratory tests indicate that tar-spot removal can be 100% if a soap wash replaces the hot-water wash after the rest period.

Cost of chemicals, including the caustic, for this process is about 0.427 mills per yd. for 80x80 print cloth.

May Combine with Desizing

The kier and quench-box methods, when they include hot-water washes, are quite effective in removing warp sizing as well as tar and asphalt. Finished fabrics from quench-box runs have been desized as effectively as a control fabric desized with enzymes. Enzyme desizing costs about 0.307 mills per yard; so elimination of this process would result in cost of about 0.1 mill per yard for 80x80 print cloth.

However, only extended tests under commercial conditions will establish the desizing efficiency of this process.

Laboratory tests also indicate that the amount of pine oil-kerosene mixture can be reduced by about one-third and still be effective in removing tar spots. If commercial tests confirm this reduction, and if the desizing effect is still retained, tar spots can be removed at no additional cost in any finishing plant equipped to give a hot-water wash after the gray-bin rest period. Finishers may thus find the process practical for all cotton goods to eliminate possible losses from occasional tar and asphalt contamination.

Plied Yarns

CONTINUED FROM PAGE 97

were higher than those for the finer yarn. Elongation increased as twist-multiplier combinations increased, and the rate of increase was greater for the coarser yarn. For low- and medium-twist single yarns, the percentage gain of ply over single-yarn strength decreased as the yarn became coarser. A comparison of the properties of a single yarn (15.5/1) to those of an equivalent two-ply yarn (31/2) showed that the ply yarn was generally stronger and was, in most cases, lower in elongation than its single-yarn counterpart (15.5/1) for the specific twist combinations used as a basis of comparison.

(All this work was done on Deltapine cotton of average fiber properties spun on conventional equipment into 31s and 15s yarn with Z-twist and twist multipliers of 2.9 to 6.9. Ply yarns were made by twisting two single yarns with S-twist and twist miltipliers of 1.9 to 7.9. Skein strength was measured on a pendulum tester, and single-strand strength and elongation were measured under ASTM procedures on an inclined-plane tester.)

How Much Per Traveler-Pound?

The true test of a traveler is the number of pounds of top quality yarn which can be spun or twisted with it before it wears out. The more yarn produced, the lower your cost per traveler-pound.

Millmen who keep a sharp eye on production costs always judge travelers on this traveler-pound rating. And that's why so many choose Victor Travelers for spinning or twisting.

Victors consistently cost less per traveler-pound for two reasons. First, because there are no better travelers made, by any test of quality and uniformity. Second, because Victor Service Engineers, all mill-trained men, can quickly grasp your special problems, and come up with the right answer.

They can not only recommend the *right* traveler, but can often make other suggestions for improving your quality and production, —whether you are running conventional fibers, synthetics, or blends.

Plan now to talk to a Victor man about your costs per traveler-pound. Write, wire, or phone the nearest Victor office . . . for prompt service.

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One of the reasons why Lestershire wood barrel bobbins give extremely long service under continuous hard use is that the fibre heads can be removed and replaced *without damage to barrels or heads.* This is made possible by our new patented screws.

The patented screws used to fasten the heads to the barrel are so shaped that their threads do not disturb the grain of the wood. They can be removed and put back in place many times when it is desired to change the heads for any reason, and always give maximum holding power.

Four of these "anchor thread" screws hold three times better than eight drive nails.

The barrels of *Lestershire* wood barrel Bobbins are of hard close-grain maple. They will not dent, chip, or crush.

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Fiber-Blender Attachment

CONTINUED FROM PAGE 95

The doffing comb is the same as those used on standard cards and oscillates at about 1,300 cycles per minute.

All of these basic parts are 5 ins. wide and are supported and driven by a suitable framework and drive.

These settings are used for all cottons:

Feed plate to cylinder	0.010 (ins.)
Flat to cylinder	
back	0.062
front	0.010
Doffer to cylinder	0.010
Comb to doffer	0.022

Operation Is Simple

The 3-gm. bat from the blender is laid out on a flat surface, and each edge is folded over slightly to provide an even edge and make the width about 4 ins. Since the length of the bat equals the circumference of the cylinder, the feed is a constant weight per unit area.

The bat is placed on the feed apron and started between the feed plate and feed roll by hand. As the fibers are released by the feed mechanism, they are picked up by the cylinder to form a thin layer of fibers. These fibers are carded between the cylinder and flat to untangle them and to obtain a uniform distribution on the cylinder. As the fibers continue to build up on the cylinder, the fibers on the surface are removed by and deposited on the doffer. These fibers are doffed by the comb. The web is supported by hand, and specimens are placed on 4x9-in. velvet boards.

Before another sample is made, the cylinder, flat, and doffer are stripped by a vacuum cleaner or by a flat covered with stripper clothing. There is a reversing switch for stripping.

What Is a Nep?

A nep is a definite fiber tangle large enough to be easily detected and with a hard central knot or center. Any neps smaller than ASTM Class A are not counted.

Procedure in Detail

The following procedure has been adopted for routine tests.

1. Condition sample for 4 hrs. at 65% r.h. and 70° F.
2. Take a 3-gr. sample in small random pinches.
3. Blend three times on the fiber blender.
4. Process on the accessory equipment. Take 10 4x9-in. web specimens.
5. Have each of two technicians count neps and refer to the standard when in doubt.
6. Calculate neps per 100 sq. ins. from the average count of the two technicians.

If the operations are properly staggered between the two technicians, about four samples can be tested in an hour.

How Good Are the Results?

Statistical and processing tests show that the method gives reproducible results and that the results are slightly more signifi-

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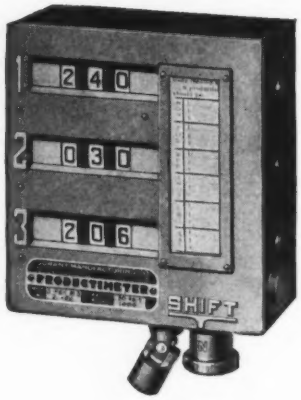

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PICK COUNTER (Model 4-PC-R-3) — Introduction of this improved model provided better readability and easier operation. The heavy drive construction assures trouble-free performance. It is tamper proof, dust proof and rust proof.

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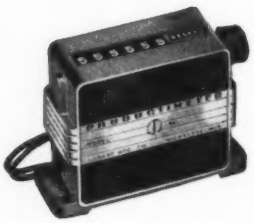

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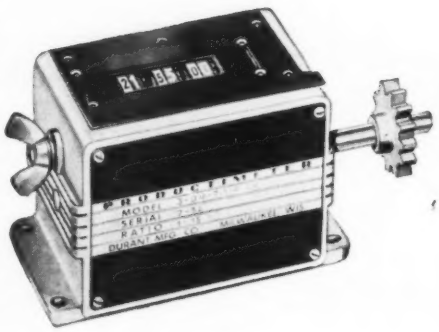
The Durant Doffmeter is a compact, predetermined counter designed to cut off the loom or signal when the preset number of yards is reached. Eliminates cut marks and waste ends by assuring uniform yardage . . . simplifies inventory control.

Present day high costs make the installation of Durant Doffmeters on every loom a practical money saving investment. Plan now . . . write or contact us for detailed information.



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cant in explaining spinning behavior than results obtained in full-scale card tests.

All of these tests were performed on an improvised model for more than a year. A finished model will soon be completed, and working drawings should be available soon.

Nepotometer

CONTINUED FROM PAGE 95

vacuum-stripping device is being planned for the machine.)

After the presser plate is replaced, the Nepotometer is ready for the next sample, which was prepared while the first test was running.

One operator can make 10 tests in 1 hr.

What Makes Neps?

Neps are aggregates of tangled fibers and are caused by mechanical manipulation.

Simple mechanics can explain why a coarse fiber is more resistant to nepping than a fine fiber and why a mature fiber is more resistant to nepping than an immature fiber. But why do fibers with the same fineness and maturity differ in nepping characteristics? The answer must lie in structural differences not usually measured. Take two metals with the same weight per unit length. Obviously the metal in chain form can be bent and tangled much more readily than the metal in rod form.

Reprocessing increases neps, and the Nepotometer is based on this repetitive action on the same fibers. The instrument also incorporates the carding and stripping actions found in a standard card.

Circular-Knitting Ideas

CONTINUED FROM PAGE 85

bles. A gap between each pair of tables enables the knitters to circulate freely to inspect and clean both sides of the machines.

Machines Are Steady

A steel cable fixed to each take-up arm keeps the superstructure steady. The cables are fixed to a ring screwed to the upper side of the arm and are hooked to a similar ring screwed to the roof rafters. A turnbuckle is adjusted to tighten the cables if the cables should slacken.

In knitting fleecy fabrics, Roanoke Mills doesn't believe in running machines too fast. Quality fabric is obtained with a needle speed of 900 ft. per min.

Motors Are in a Safe Place

A neat arrangement of the motors and line shafts minimizes oil splashing and maintenance. Two girders running across one end of the knitting room

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Yarns spun with Lurex staple, give to fabric design a new fluency of pattern... achieve undertones of shimmer with new subtlety. Flecks of the gleaming metallic appear unexpectedly, as if scattered at random with carefree artistry. There's a completely new approach to texture interest.

The scope for yarns spun with Lurex staple is almost unlimited. To every type of fabric, from automobile upholstery to high fashion fabrics, they offer new possibilities in creative styling.

The Yarn Sales Division of your local Dobeckmun office will gladly furnish you with samples of the new Lurex staple, and will give you full details of its adaptability for spinning with any yarn. Lurex, non-tarnishing metallic yarn is made only by the Yarn Division of the Dobeckmun Company.

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support 7½-hp. motors for each line shaft.

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The main heating duct runs in front of the motors and forms a compact unit that takes up a minimum of space and gives no interference with the knitting machines.

Slasher Drive

CONTINUED FROM PAGE 89

control. That arrangement was better than manual operation and will be used again when moisture controls are rearranged.

Other controls located on the same instrument panel with the master rheostat are an ammeter for direct indication of loom-beam tension, a tension-control knob, a slow ("creep") speed control knob, and a start-stop push-button station.

Eight push-button stations with start-stop and creep-speed controls are positioned at easily reached locations around the slasher and slasher creel.

The magnetic amplifier is part of the equipment contained in an enclosed cabinet located on the floor below the slasher room. The cabinet is directly underneath the master-rheostat panel. For best performance of the system, the magnetic amplifier must be as near as possible to the other parts of the drive; and in this slasher-room building, the lower-floor location is the nearest available position.

There Are No Moving Parts

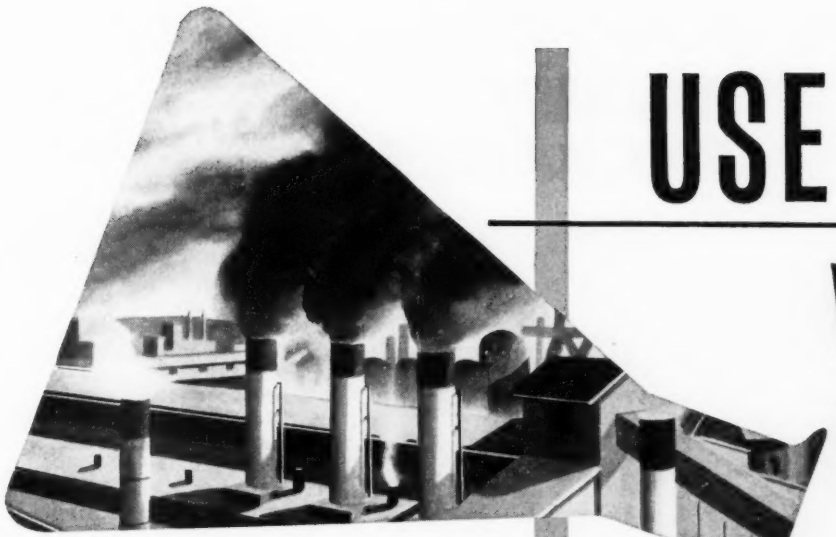
The cabinet housing the magnetic amplifier also contains a main generator with a motor, a selenium exciter, a motor with a booster generator, and a motor-operated rheostat to change slasher speed from creep to high speed.

The magnetic amplifier is, in effect, two transformers with stationary windings. It has no moving parts and, from present indications, should last for years without maintenance.

The main generator is driven by an alternating-current motor taking power from the mill supply line.

The three gear motors, the size-box control panel, the master rheostat panel, and the parts in the housing containing the magnetic-amplifier are connected with armature and field circuits and act as a single unit.

The speed of all three gear motors is set with the master rheostat, but the beam motor automatically slows down as the beam diameter builds up. When the master rheostat is set at a given speed, the speed of the size-box and



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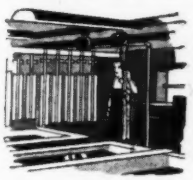

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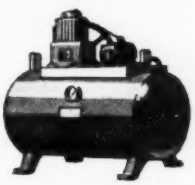
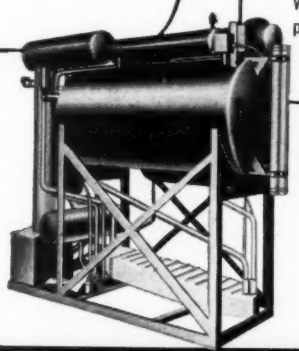


Increase capacity and improve performance of air compressors and internal combustion machines! The Water Chiller is compact, light; can be safely installed on almost any floor.



The Servel Water Chiller cooling system has no moving parts to wear. It is quiet and vibration-free. Light floor loading and freedom from vibration mean that no special foundations or braces are needed. Zone control is unusually easy. And operation (using waste heat, or steam from the cheapest source) is low in cost. Backed by a 5-year warranty. See your dealer or mail coupon for information and engineering co-operation.

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delivery-roll motors remains constant; but the speed of the loom-beam motor decreases.

Operation Is Quickly Learned

The drive is easily operated. Within a few minutes after the drive was installed, the slasher operators on each of the three shifts had learned to operate it. These methods are used:

First, tension between the squeeze rolls and delivery roll is set with the knob of the size-box motor rheostat. This setting has not been changed at the Alexander City plant since the drive was installed.

Second, the master rheostat at the control panel is set to regulate the speed of the slasher. When this setting is changed, the speed of all three gear motors is changed. At present, this setting is normally changed to increase or decrease the speed a slight amount two or three times each shift. Settings are changed when the moisture recorder shows a variation.

When the master rheostat is connected to an automatic moisture control, no manual changes are ever made to the rheostat.

The third setting made is an adjustment of the beam-tensioning knob at the control panel. This setting is made at the first warp when yarn numbers change greatly and remains the same as long as yarns of fairly close numbers are run.

The fourth setting that can be made by the slasher operator is for regulating the creep speed. This setting, too, is made by simply turning a knob. Creep speed run at present is 2 to 3 yds. per min. The control is left at this speed position, but the speed can be varied from 1 to 8 yds. per min. by turning the knob.

A desired change in the range of the creep speed to position the manual control at the 1- to 8-yd. variation is the only adjustment of a maintenance nature made since the drive has been operating. To make this change, a screwdriver was used to reposition a variable-resistor tap inside the housing. The job required 5 mins.

When a loom beam is doffed, the slasher operator presses a "stop" push button. Then he releases the tension on the loom beam by pressing a push button.

The yarn is cut, the full beam doffed, and an empty beam put in. The slasher drive is positioned at creep speed until the yarn is started around the new beam. Then the "fast" push button is pushed for full speed.

The total operator attention the drive requires during an 8-hr. shift, other than beam doffing, averages less than 5 mins. on the range of yarns being run at the Alexander City plant.

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Books of Interest

How To Design a Duct System

FLOW AND FAN, C. Harold Berry; The Industrial Press, 148 Lafayette St., New York 13, N. Y.; hard cover, 226 pages, $4.00.

Basic calculations in the design of duct systems for moving air or other gases are covered in this book by Prof. Berry of Harvard University.

The title comes from the two major divisions of treatment: (1) the flow of gas through duct systems, and (2) fan performance and control. In the seven chapters on gas flow, basic data and methods for finding system resistance are presented; and the final six chapters are devoted to the practical task of selecting a fan for a given duty.

Portions of the book are at an elementary level for those who want an introduction to the subject; but other portions, such as equivalent orifice and the space-saving Gibson tapered enlargement, will be worthy of the attention of the most advanced.

Towards Standards On Noise

THE RELATIONS OF HEARING LOSS TO NOISE EXPOSURE; American Standards Assn., 70 E. 45th St., New York 17, N. Y.; paper, 64 pages, $1.50.

This report was made by a committee of the American Standards Assn. after 18 months of research. It will be used as a basis for development of future standards for control of noise. The report contains 9 chapters, 4 appendices, an index, and about 50 charts and tables.

Noise levels and their relations to bearing noise are of vital interest to the textile industry. Any one interested in this subject would do well to read this report as background.

Two Books on Detergents: One Reference, One Manual

BIBLIOGRAPHICAL ABSTRACTS OF METHODS FOR ANALYSIS OF SYNTHETIC DETERGENTS; American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa.; paper, 20 pages, $1.25.

This booklet is a compilation of 96 Bibliographical Abstracts from 1929 to 1951. It is presented to keep pace with the wealth of published information on the subject. It contains subject and author indexes, and it will prove useful to persons engaged in the analysis or evaluation of surfactants.

DETERGENCY EVALUATION AND TESTING, Jay C. Harris; Interscience

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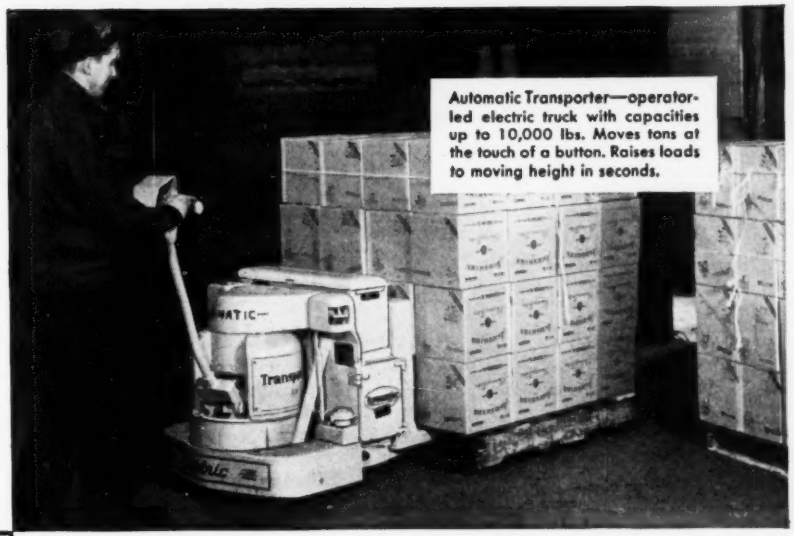

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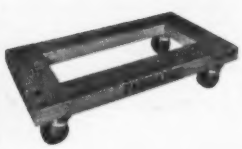

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Publishers, Inc., 250 Fifth Ave., New York 1, N. Y.; hard cover, 209 pages, $3.75.

Mr. Harris of Monsanto Chemical Co. has worked with the AATCC and other societies interested in testing and evaluating detergents in preparing this manual. Its value lies in its simple, direct descriptions of machines and methods used for testing detergents for cotton and wool washing and washing procedures for other fibers.

Probability and Statistics

HANDBOOK OF PROBABILITY AND STATISTICS, with Tables, Burlington and May; Handbook Publishers, Inc., Sandusky, Ohio; hard cover, 330 pages, $4.50.

There is not a single specific reference to textiles in this book, and only one short chapter on sampling inspection and quality control (but a very good short chapter). As a straight handbook on probability and statistics, it has the merits of an excellent presentation. A separate index of symbols used in statistics is an unusual feature. This handbook is recommended to the quality-control man who wants a good general understanding of probability and statistics as well as a knowledge of specialized applications.

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Many problems connected with the operation and lubrication of air compressors can be avoided by installing the compressors correctly and providing the necessary auxiliary equipment.

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Locate the air intake in clean air, and equip it with an efficient filter of adequate size to prevent contamination by moisture, dust, smoke, fumes, paint, and other air-borne materials that will form harmful deposits within the compressor.

Use an air intake of adequate size and as short as possible. Locate the filter where it can be cleaned easily. Arrange all piping to avoid unnecessary pockets for oil and moisture to accumulate, and install suitable traps and drain valves.

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THE CHOICE OF BETTER MECHANICS

*Snap-on is the trademark of Snap-on Tools Corporation

the compressor to relieve the compressor of incidental stress that may result in misalignment of cylinders. Select a discharge pipe of sufficient size to minimize vibration, and equip it with traps or drains.

Use good engineering practices in locating safety valves, and provide necessary temperature and pressure regulating devices.

Have an adequate supply of cooling water for cylinder jackets, cylinder heads, and intercoolers. To avoid condensation on the cylinder walls, the coldest water should normally be passed through the intercooler first; and then it should be passed to the cylinders.

Carefully align the compressor and related driving equipment to avoid uneven wear and other troubles.

2. Clean and Oil All Parts

Thoroughly clean all piping, valves, and accessory equipment before installing it. Threaded or welded pipe always has some metal chips or welding slugs inside. If metal pieces, pipe scale, dirt, and all other foriegn materials are not carefully removed, they will be loosened by the flow of air or liquid and will cause serious damage.

Starting up and breaking in new compressors is always a critical operation; and if it is not done properly, serious damages will result. Thoroughly clean and inspect the unit. Cover the pistons, rings, cylinders, piston-rod packing, bearings, and pistons with oil during assembly. Fill the crankcase and cylinder lubricators with the proper oil.

Prime the lubricator lines with oil, and then disconnect them at the compressor to be sure the oil is going through the lines.

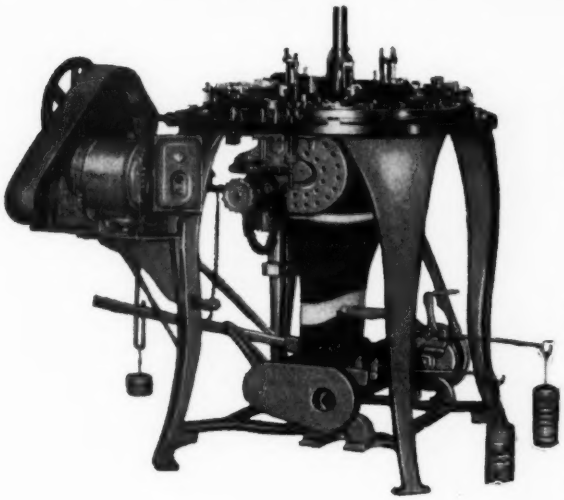
When the compressor is installed and broken in right, careful lubrication will keep it running a long time without major problems or repairs.

One of the biggest problems in compressor lubrication is overlubrication. When an operator observes wear, he often increases the amount of oil fed to the compressor cylinders. The overlubrication that follows results in excessive carbonization of the discharge valves and increased discharge temperatures.

Wear is not ordinarily a result of lubrication practices but usually comes from dirty oil and air. Intake air is often contaminated with dirt, pipe scale, welding beads, rust particles, entrained moisture, and condensation.

3. Use the Correct Amount of Oil

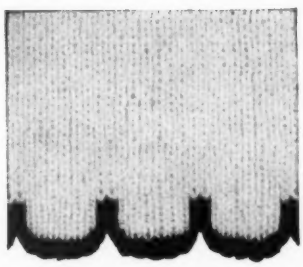
It is impossible to establish a hard-and-fast rule for the proper amount of oil that should be applied to a cylinder, but a good starting point is to set

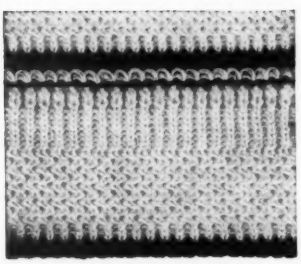


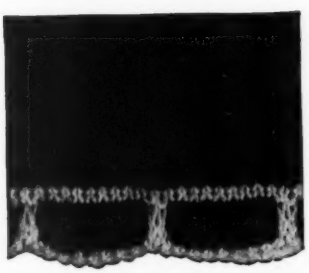
KNITTED TRIMMINGS at low cost with LEIGHTON'S

Knit Trimming Machine

- • • Particularly suitable for knit trimmings for Full-Fashioned Sweaters
- • • Faster by far than any other trimming machine—Two speed selectors
- • • Unusual design possibilities
- • • Possessing LEIGHTON'S well known quality construction features







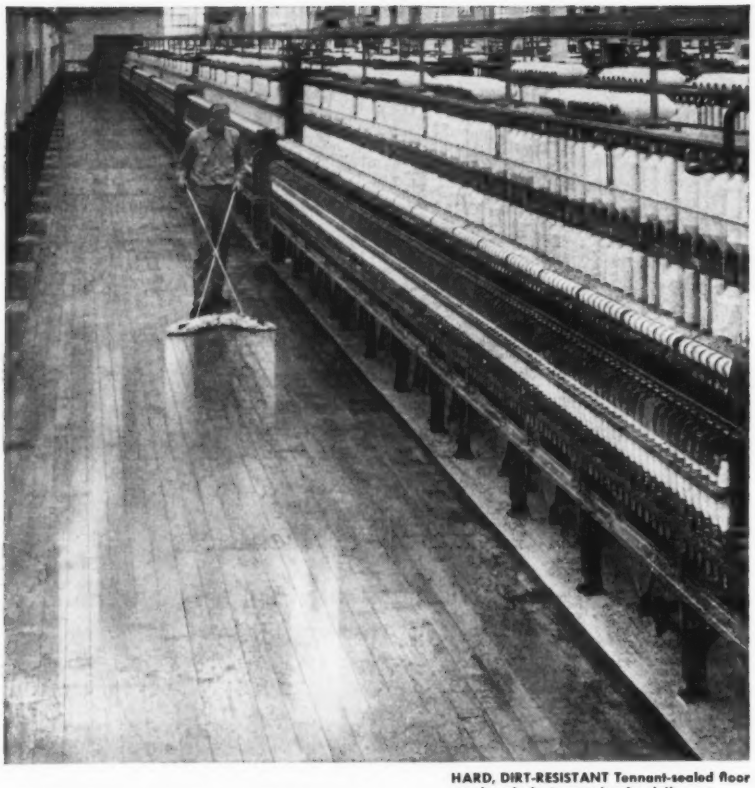
NO OTHER MACHINE LIKE IT ON THE MARKET!

Compare these specific advantages!

- • • Can produce scalloped edge trimmings (double needle on both sides)
- • • Can stripe on cylinder or dial needles or both
- • • Can use rubber for elasticity
- • • Perfect for cuffs, collars, bottoms and other knitted trimmings

LEIGHTON MACHINE COMPANY

MANCHESTER, N.H.



HARD, DIRT-RESISTANT Tennant-sealed floor needs only fast sweeping for daily care.

COMPARED WITH 5 YEARS AGO...

you now get brighter, cleaner floors at 1/2 the cost

When TENNANT introduced the dry-cleaning method years ago, it slashed previous textile floor maintenance costs to an all-time low.

But today, as a result of *important new improvements*, it does even more. It reduces average annual maintenance costs to about 50% of what they were just 5 years ago. And today's *tennantized* floors—as the photo shows—are far brighter . . . cleaner . . . more dirt-resistant than ever before. Some of them look like ballrooms!

New, Easy-to-Use Techniques Save Manhours

Here's why these new cost-saving results are possible:

1 Tennantized floors now need only 1/5 to 1/10 the former buffing, and about 50% as much labor-per-square-foot . . .

2 Improved Tennant materials last up to 4 times longer, stand up better under oil, moisture, dirt and traffic . . .

3 New techniques save time in problem areas such as humid weave rooms, in twisting, etc. *Ask for free, accurate estimate of savings your mill may expect.*

TENNANT
ESTABLISHED 1870

G. H. TENNANT CO.
2586 N. 2nd Street
Minneapolis 11, Minn.

FLOOR MAINTENANCE SYSTEM

For more information, write direct or use Reader Service post card.

the lubricator to deliver one drop of oil per cylinder per minute for every 1,000 sq. ft. of cylinder surface swept per minute. The amount of oil used should be approximately 1/10 pint per 10 hrs. per 1,000 sq. ft. of cylinder surface swept per minute.

After a compressor is run a few hours with this supply of oil, pull one of the discharge valves and observe the interior surface of the cylinder. The surface should be oily at the top, but there should be no evidence of excess oil on the piston or in the discharge passages.

Reset the lubricator until the cylinder shows a satisfactory condition. When the correct condition is determined, measure the actual amount of oil consumed and use the amount as a basis for keeping the oil feed rate in line. Recheck the cylinders occasionally to be sure they are being properly lubricated.

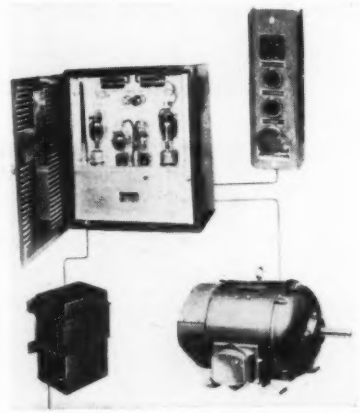
The amount of oil fed to the piston-rod packing should be similarly reduced until the rod shows a thin continuous film. No excess oil should come from the packing vent or accumulate in the cylinder yokes.

From a valve-operating standpoint, as light and volatile an oil as possible should be used for air-compressor lubrication. The cylinder- and bearing-lubrication requirements, however, may call for a heavier oil. A compromise between viscosity and volatility usually results. *The Texas Co.*

Textile Equipment News

CONTINUED FROM PAGE 130

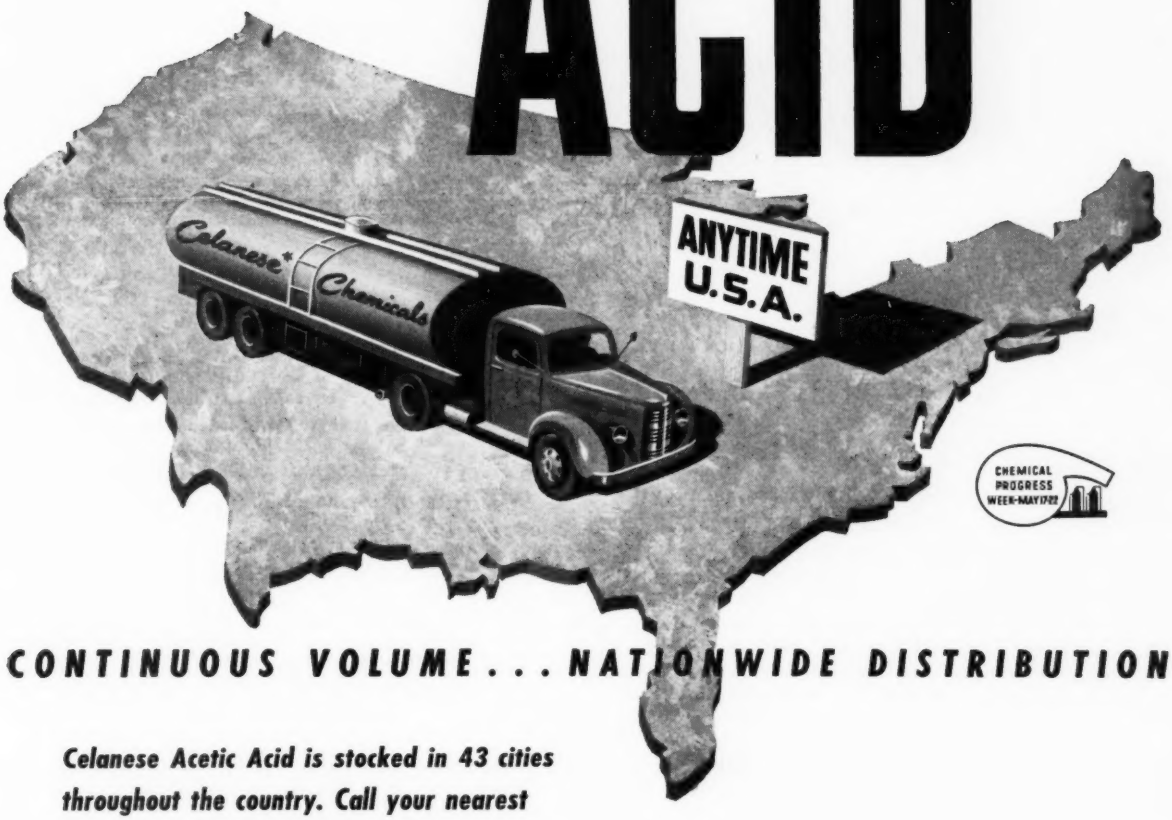
Adjustable-Speed Drive Has Flexibility and Close Control



STEPLESS DRIVE is said to feature precision speed control, a wide speed range, ability to be modified, and simple electronic circuits.

A new stepless adjustable-speed drive, the Electronic Select-A-Speed, has been announced by the Louis

Celanese ACETIC ACID



CONTINUOUS VOLUME . . . NATIONWIDE DISTRIBUTION

Celanese Acetic Acid is stocked in 43 cities throughout the country. Call your nearest Celanese Sales Office for fast delivery:

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140 Federal Street . . . . . Boston 10, Mass.
P. O. Box 1414 . . . . . Charlotte 2, N. C.
101 E. Ontario Street . . . . . Chicago 11, Ill.
1422 Euclid Ave. . . . . Cleveland 15, Ohio
3460 Wilshire Blvd. . . . . Los Angeles 5, Calif.
3615 Olive Street . . . . . St. Louis 8, Mo.
607 Market Street . . . . . San Francisco 5, Calif.

Celanese* CHEMICALS

*Reg. U.S. Pat. Off.

CELANESE CORPORATION OF AMERICA, CHEMICAL DIVISION, 180 MADISON AVE., NEW YORK 16, N. Y.

Just how important are pre-lubricated bearings?

When it comes to Textile Mill operation, we would say pretty darned important. How many bearing units in your mill are lubricated by the time and money-wasting hand method and how many hours of machine down-time are incurred. In other words how much does it cost you to lubricate one bearing a year. Were you sure that every bearing was located, contacted and received the right amount and right kind of lubricant. Are you plagued with the constant danger of lubricant dripping onto goods in process. Does cotton lint, dust and dirt materially affect bearing life in your mill.

You never have to worry about these troubles if you install Woods Life-Lube Bearings. You never have to lubricate them because they're sent to you *permanently lubricated for life* (with the correct amount and right type of lubricant). A Neoprene seal bonded to a steel core seals lubricant in. There's no grease fittings to catch oil thirsty lint and dirt. And, there's no danger of leakage, either.

For specific information and product application send for Bulletin 194 and the name of your nearest Woods Distributor.

T.B. Wood's SONS CO. CHAMBERSBURG • PA.

Mechanical Power Transmission Manufacturers Since 1857

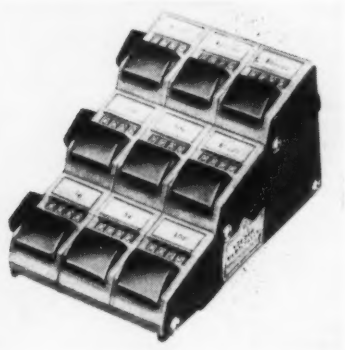
Cambridge, Mass., Newark, N. J., Dallas, Tex., Cleveland, O.

Allis Co., Milwaukee 7, Wis. It operates from a.c. power lines and is available with d.c. motors in standard NEMA frame sizes, ¾ to 15 hp.

This new unit is built with speed ranges of 5 to 1, 20 to 1, or 50 to 1, with a 100-to-1 ratio available for some applications. Speed regulation is claimed to be especially precise. When the unit is used with tachometer feedback equipment, the regulation will be ± ½%.

Circle T-33 on Reader-Service Card

Counter Has Several Textile Applications



VARY-TALLY is the name given to this counter by Veeder-Root, Inc., Hartford, Conn. It is available in 66 combinations with up to six banks high and 12 units wide; and it is used for such things as quality control, inventory control, and payroll preparation.

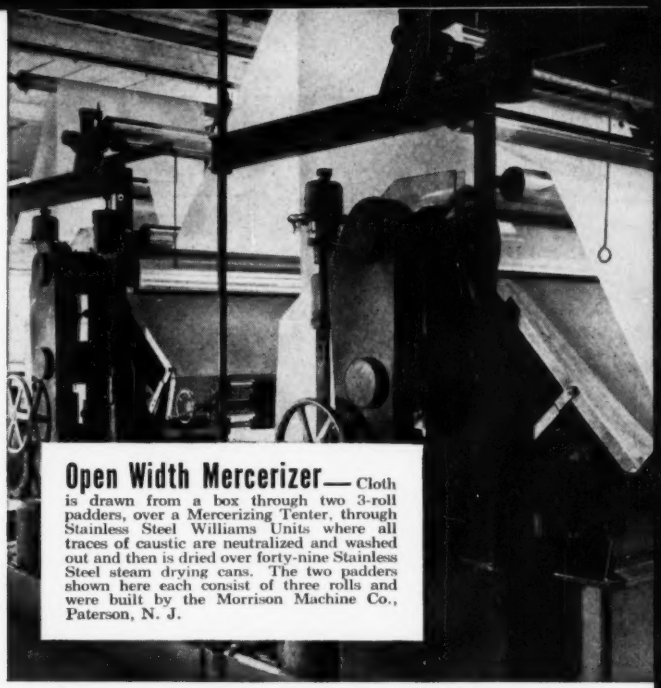
Circle T-34 on Reader-Service Card

Design of Caster Keeps Waste From Collecting

THE SHEPHERD CASTER, invented in Australia, is being manufactured by Wright-Batchelder Corp., 10 High St., Boston 10, Mass. It has two rounded sides to keep waste from accumulating. Other features are permanent lubrication and free swiveling. Two sizes are available with or without rubber tires: 2-in. dia. with 100 lbs. capacity and 4-in. dia. with 700 lbs. capacity.

Circle T-35 on Reader-Service Card

Open Width Bleach— Cloth passes through an open width washer, caustic saturator, steamer, washer, peroxide saturator, steamer, washers and then over forty-nine Stainless Steel steam heated dry cans. All the equipment with the exception of the rubber rolls is Stainless Steel. Shown here are the Tensitrol Open Width Washers fabricated by Rodney Hunt Machine Co., Orange, Mass.



Open Width Mercerizer— Cloth is drawn from a box through two 3-roll padders, over a Mercerizing Tenter, through Stainless Steel Williams Units where all traces of caustic are neutralized and washed out and then is dried over forty-nine Stainless Steel steam drying cans. The two padders shown here each consist of three rolls and were built by the Morrison Machine Co., Paterson, N. J.

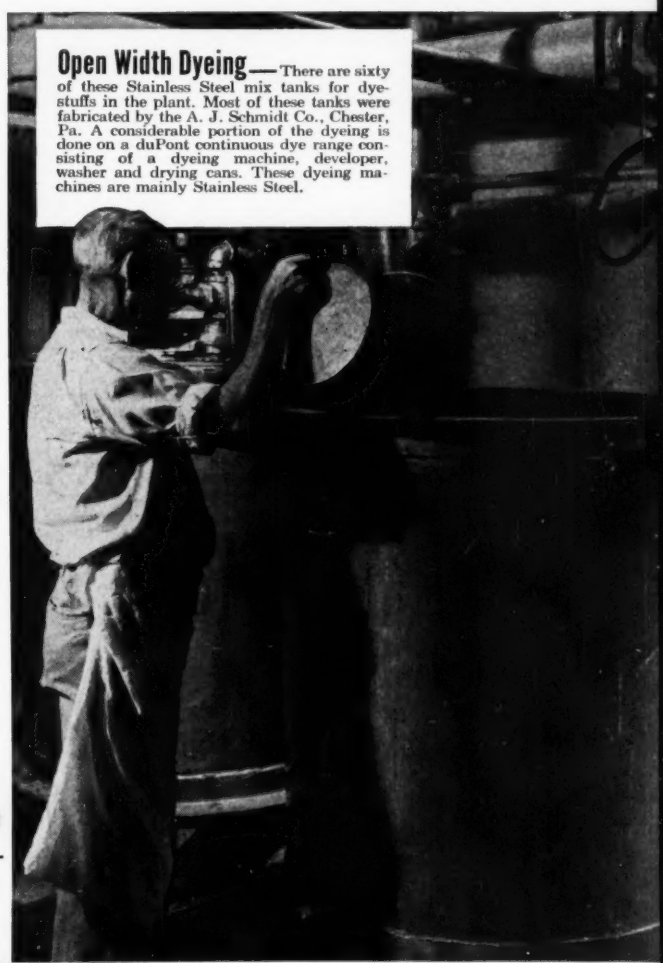
Stainless Steel prevents contamination at every step

WHEN you are finishing cloths in continuous lengths, the smallest stain can be an expensive proposition, for it means reprocessing an entire bolt. The most effective way to guard against contamination from rust, dye carry-over or other causes is with equipment made of Stainless Steel.

The 123-year-old firm of Joseph Bancroft and Sons Co., Wilmington, Del., takes full advantage of the ability of Stainless Steel to protect against contamination by using it extensively in bleaching, mercerizing and dyeing operations.

This firm has found that Stainless Steel's light, bright surface makes detection of foreign matter easy. Its superior corrosion resistance completely does away with the problem of rust from the equipment itself. Its dense, smooth surface does not retain dye from one color to the next. And its durability, with resulting savings in maintenance and replacement, makes it the most economical material in the long run.

Follow the lead of America's foremost textile plants and use Stainless Steel wherever its many advantages dictate. And when you do, be sure it is perfected, service-tested USS Stainless Steel. Then you know you'll get the finest performance.



Open Width Dyeing— There are sixty of these Stainless Steel mix tanks for dyestuffs in the plant. Most of these tanks were fabricated by the A. J. Schmidt Co., Chester, Pa. A considerable portion of the dyeing is done on a duPont continuous dye range consisting of a dyeing machine, developer, washer and drying cans. These dyeing machines are mainly Stainless Steel.

UNITED STATES STEEL CORPORATION, PITTSBURGH
AMERICAN STEEL & WIRE DIVISION, CLEVELAND
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
NATIONAL TUBE DIVISION, PITTSBURGH
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
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USS STAINLESS STEEL

USS

SHEETS · STRIP · PLATES BARS · BILLETS
PIPE · TUBES · WIRE · SPECIAL SECTIONS

4-1016

UNITED STATES STEEL

Here's looking at you
8 ways!
TOLEDO
NO SPRINGS HONEST WEIGHT
NEW...
8 choices of Dial Direction!
New Toledos provide utmost reading convenience for operator . . . help you control costs with greater *speed* and *accuracy*. On all new Toledos with swivel heads the dial can be installed to face any of eight directions in relation to the platform; also with full 360° swivel.
44 *Ways Better* . . . See the great new Toledo Industrial line . . . put it to work in guarding your costs better . . . faster. Write for bulletin 2001. Toledo Scale Co., Toledo 1, Ohio.
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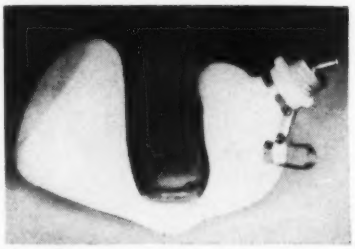
Today more than ever
HEADQUARTERS FOR SCALES

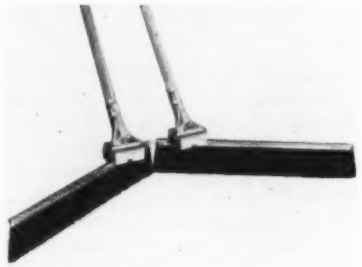
Plastic Has Advantages As Conditioning Bottle



CONDITIONING ATTACHMENT for Foster Models 102 and 75 winding machines (Foster Machine Co., Westfield, Mass.) now has a bottle made of polyethylene plastic. Plastic bottles cost about fives times as much as glass bottles, but here are the advantages: they weigh only 2 lbs. ½ oz. each, are impervious to conditioning agents, and are practically indestructible. The liquid level can be seen through the plastic.

Circle T-36 on Reader-Service Card

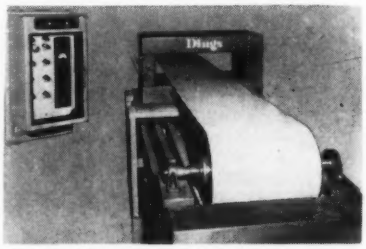
Push Brooms Said To Be Ideal for Textile Mills



PUSH BROOMS, called Blade Sweeps, are lightweight and adjustable. Made by Industrial Div., Fuller Brush Co., Hartford, Conn., the brooms are said to be ideal for moving light, bulky waste in textile mills. Brush strips are 18 to 36 ins. long, and brush material includes synthetic and tampico fibers and wire. Another use for the brooms is spreading paint over large floor areas.

Circle T-37 on Reader-Service Card

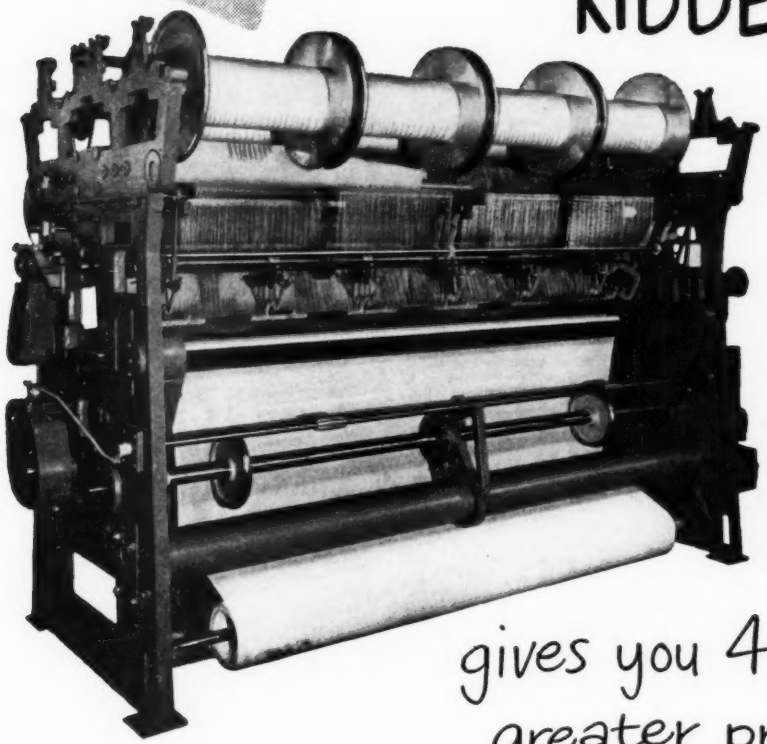
Tramp Metal Is Detected in Bulk Material Such as Cotton



ELECTRONIC METAL DETECTOR signals the presence of metal, ferrous or nonferrous, by a variety of signal systems or reject systems. The instrument is made by Dings Electronics, Inc., 4740 W. Electric Ave., Milwaukee 46, Wis.

Circle T-38 on Reader-Service Card

here's the NEW Model "E" KIDDE KNITTER



gives you 40 to 50% greater production on tulle, shoe fabrics, elastic power net, etc.

Production speeds up to 500 courses with 2 guide bars . . . up to 400 courses with 4 guide bars can be maintained 24 hours a day with the new Model E Kidde Knitter. A completely new machine, the Model E is equipped with high speed cams, totally enclosed and running in oil . . . double the usual number of guide bar rocker cams . . . pattern wheels or chain drum . . . quick stop . . . and practically non-breakable needles—all features never found in a Raschel machine before. Investigate how this machine can slash your knitting costs! Write for full information.

The word "Kidde" is the trademark of Walter Kidde & Company, Inc., and its affiliated companies.

KIDDE MANUFACTURING CO., INC. • BLOOMFIELD, NEW JERSEY

Kidde Knitter

TEXTILE WORLD

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ENGINEERED TEXTILE DESIGN — **Set of 5 articles. $1.25 per set**
A series of articles of interest to those engaged in practical fabric design or in teaching functional design. One article introduces the all-fiber system, which takes the guess out of how many ends and picks to use in changing to a new fabric. Another shows how to change weight without changing structure. Detailed numerical examples are provided. A discussion of yarn diameters, as the basis of structure, opens the series.

SYNTHETIC-FIBER TABLE — **50¢ each, 40¢ in lots of 20 or more**
The latest (1953) edition lists by type and name all U. S. yarns and staple fibers in commercial production. A list of suppliers by type and form of fiber is also included. Valuable related data and a "Terminology and References" section are included. Comparative properties of wool and cotton fibers are included. An explanation of glass-fiber nomenclature and its yarn-numbering system makes conversion to cotton counts easy.

WOOL-SYSTEMS FLOW CHART — **35¢ each, 25¢ in lots of 20 or more**
New (1953) edition shows all the processes in making woolen and worsted fabrics on all yarn systems. Six typical finishing routines are also pictured to cover the main fabric types. The chart includes the manufacture of synthetic and blended fabrics on wool systems.

COTTON FLOW CHART — **25¢ each, 15¢ in lots of 20 or more**
An illustrated step-by-step process chart of cotton manufacturing from bale to finished fabric. Both principal and alternate flows are shown.

CONTINUOUS-FILAMENT FLOW CHART — **25¢ each, 15¢ in lots of 20 or more**
Principal and alternate step-by-step process in handling continuous-filament yarns from the case of yarn to the finished fabric (including tire cord) are shown.

KNITTING FLOW CHART — **15¢ each, 10¢ in lots of 20 or more**
The sequences of processes for the subdivisions of the knitting branch of the industry—women's hosiery, men's full-fashioned hosiery, half-hose, and knitted underwear and outerwear (circular and warp)—are shown and illustrated.

FELT FLOW CHART — **15¢ each, 10¢ in lots of 20 or more**
Manufacture of roll felts, sheet felts, and felt wheels is shown in step-by-step order.

COTTON-FIBER TABLE — **25¢ each, 15¢ in lots of 20 or more**
Revised (1953) edition shows fiber properties and manufacturing performance of the 11 varieties of cotton that make up more than 80% of the U. S. cotton grown. Data given enable mills to save money by selecting the best fiber for the end product.

TEXTILE BIBLIOGRAPHY — **25¢ each, 15¢ in lots of 20 or more**
An up-to-date listing of the important English-language books on textile technology. Twelve-page folder lists more than 1,400 items in 20 categories and includes a directory of publishers.

SHRINKAGE TABLES — **25¢ each, 15¢ in lots of 20 or more**
These tables permit quick determination of ½ to 25% shrinkage, covering pieces from 50 to 100 yds.

THE SUPERVISOR AND HIS JOB (April, '53). 25¢ each, 15¢ in lots of 20 or more

HOPI ACALA (May, '53) — **25¢ each, 15¢ in lots of 20 or more**
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CENTRALIZED LUBRICATION OF TEXTILE MACHINERY (May, '49), 25¢ each, 15¢ each in lots of 20 or more.

HOMOGENIZATION IN WARP SIZING (Nov., '49). 25¢ each, 15¢ in lots of 20 or more

STANDARD DEPARTMENTS (March, '50). 25¢ each, 15¢ in lots of 20 or more.

NEPS . . . AND HOW TO CONTROL THEM (May, '52). 25¢ each, 15¢ in lots of 20 or more.

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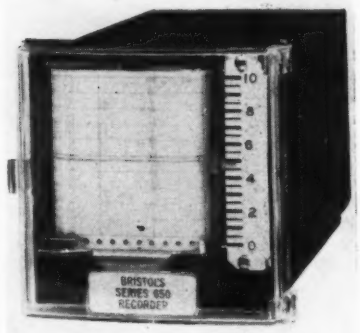
Three-Part Control System Operates From Same Signal



THIS RECORDER is one unit in a new three-part pneumatically operated instrument system announced by The Bristol Co., Waterbury 20, Conn. The three units in the system, called Metagraphic, are a transmitter, a receiver, and a controller. Each unit can be installed at the best place for it. A universal 3- to 15-psi. air signal interconnects the three units, and the components are interchangeable.

Circle T-39 on Reader-Service Card

For Accurate Strength Tests

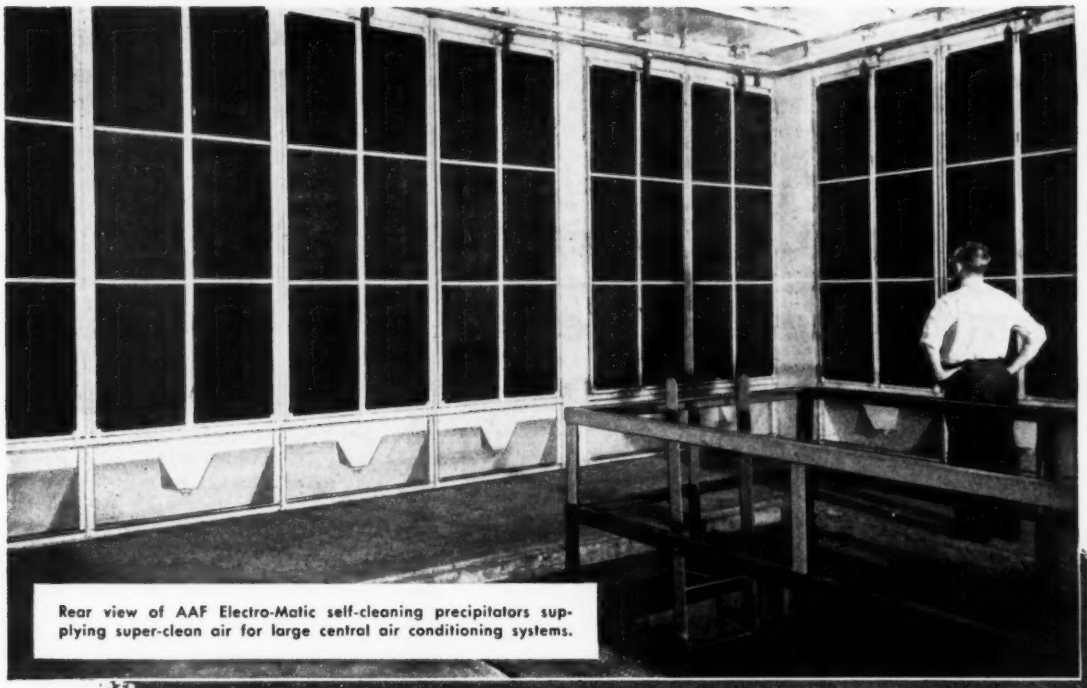
NEW CLAMPING JAWS grip fine-filament yarns for tensile-strength tests on a Dillon Multi-Low-Range tester. Developed by W. C. Dillon & Co., Inc., Box 3008, Van Nuys, Calif., the jaws enable a true test to be made without weak points developing at the clamps. Full stress is brought to bear only after the filaments have wound at least two times around self-aligning drums.

Circle T-40 on Reader-Service Card

Better Joint For Spinning Tape

A new reinforced joint for its spinning and twisting tapes (⅜ to 2 ins.) has been developed by Dis-Yort Tape & Belt Co., 229 Pleasant St., Paxton, Mass. The new joints are said to last longer than the old type.

Circle T-41 on Reader-Service Card



Rear view of AAF Electro-Matic self-cleaning precipitators supplying super-clean air for large central air conditioning systems.

Dust and Smoke Giving You a "Dirty" Deal?

AAF Electro-Matic Precipitators put a Stop to Spoilage from Soilage

Dust, soot and smoke are the sworn enemies of "quality"—a major cause of reject in spinning, weaving and dyeing operations. That's why scores of textile mills depend on AAF Electro-Matics to provide super-clean air for their air conditioning and humidifying systems.

The Electro-Matic is a high efficiency electronic precipitator that collects smoke with the same ease as larger air-borne materials. Its automatic self-cleaning action permits continuous operation at peak efficiency. There are no costly shut-downs for washing and re-oiling of collector plates. When Electro-Matics "take over", super-clean air in constant, uniform volume is assured *automatically*.

Fewer rejects, lower maintenance costs and peace of mind are all yours the day Electro-Matics go to work—because that's the day dust, soot and smoke are barred forever from your air conditioning system. For complete information on Electro-Matic precipitators, call your local AAF representative or write direct for Bulletin 250.

American Air Filter
COMPANY, INC.
304 Central Avenue, Louisville 8, Kentucky • American Air Filter of Canada, Ltd., Montreal, P. Q.

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Joseph T. Ryerson & Son, Inc. Plants at: New York, Boston, Philadelphia, Charlotte, N. C., Cincinnati, Cleveland, Detroit, Pittsburgh, Buffalo, Chicago, Milwaukee, St. Louis, Los Angeles, San Francisco, Spokane, Seattle

• Cole builds vessels to your specifications — dye-vats, kiers, starch-kettles, acid tanks, jib boxes, or other processing vessels for the finishing and dyeing industry . . . in stainless steel, nickel-clad steel, or of standard steel lined with monel metal.

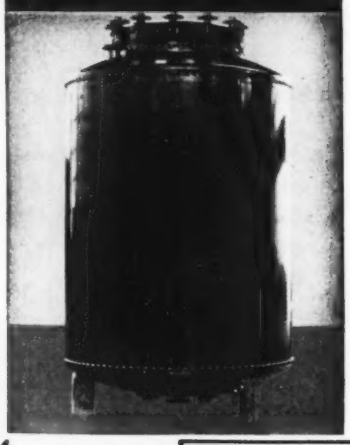
Our long experience in the design and fabrication of vessels for the textile industry may be of help to you.

•

Write for latest Cole catalog— "Tank Talk"

COLE

PRESSURE VESSELS FOR TEXTILE LIQUIDS

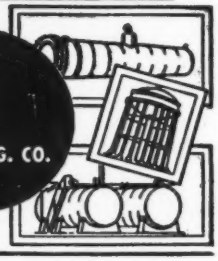


Established 1854

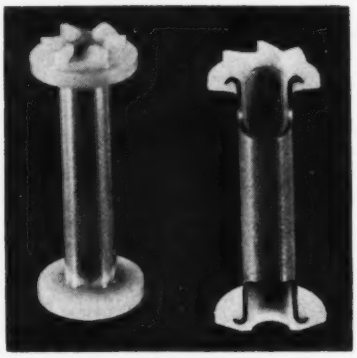
R. D. COLE MFG. CO.

NEWNAN, GEORGIA

ELEVATED TANKS • VESSELS • CYLINDERS TOWERS • BINS • STANDPIPES



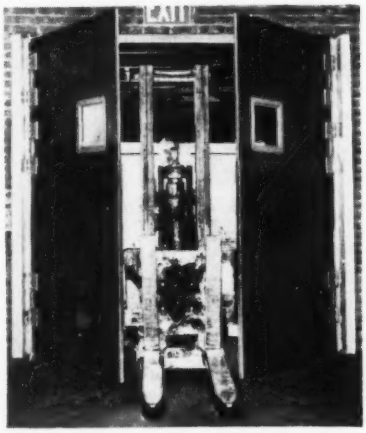
Braider Bobbins Made of Nylon Molded on Aluminum



NYLACLAD BRAIDER BOBBINS, made of nylon molded to a hub of aluminum tubing, are available from Plastic Mold & Engineering Co., 473 Washington St., Wellesley 81, Mass. The nylon is molded through the hub bore to form the lining and flanges. Dimensions are stable to 0.003 in.; teeth and flange edges will not clip; and grease or oil will not injure any part.

Circle T-42 on Reader-Service Card

Bumper Doors Have Steel and Rubber Armor



BUMPER DOORS have outer armor of soft rubber on sheet steel over a plywood core. The windows are shatterproof. Made by American Hard Rubber Co., 93 Worth St., New York 13, N. Y., the doors will not splinter, sag, bend, or warp. They are furnished complete with hinges.

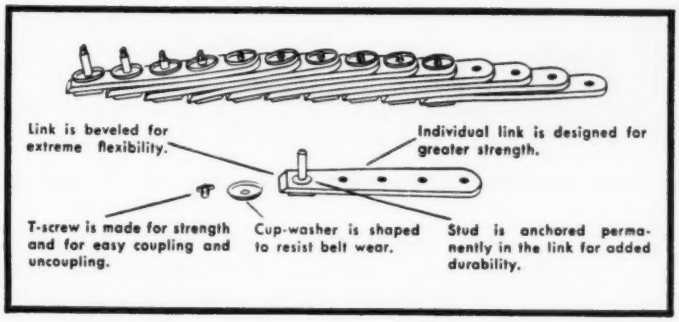
Circle T-43 on Reader-Service Card

Punched Chart Shows Time and Cause of Stoppage

Punch-chart mechanisms with up to six combinations for recording the causes of machine stoppages are manufactured by Servis Recorders Ltd., 19 London Rd., Gloucester, England. The chart shows the coded cause and the time of stoppage.

Circle T-44 on Reader-Service Card

This detailed line drawing of the new Veelos TD and TE v-belt makes it easy to see how this new v-belt is designed to do a better job . . . easier!


Link is beveled for extreme flexibility.
Individual link is designed for greater strength.
T-screw is made for strength and for easy coupling and uncoupling.
Cup-washer is shaped to resist belt wear.
Stud is anchored permanently in the link for added durability.

New VEELOS

TD and TE Adjustable V-Belt for D and E drives

- ***easy* to couple and install**
- **does a *better* job for a *longer* time**

THE NEW VEELOS TD AND TE adjustable v-belt was developed *specifically* for D and E drives. It's not just an adaptation, it's an entirely new patented v-belt design!

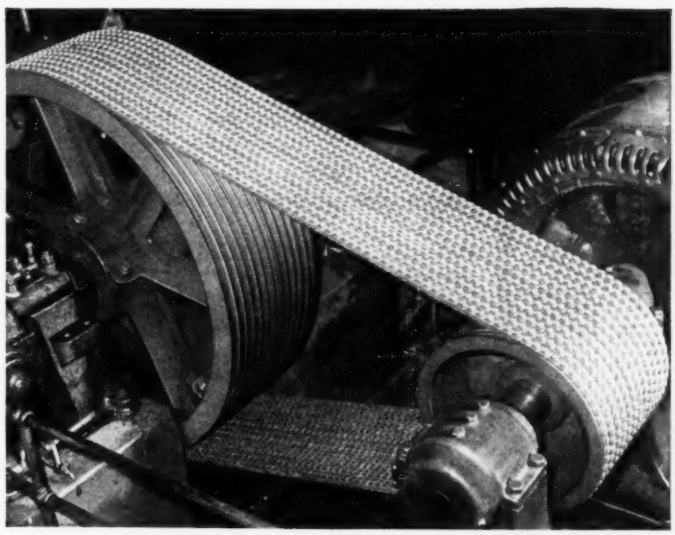
New Veelos TD and TE v-belt is faster and *easier* to install. Cup-washers and T-screws join links together to make up individual belts—and you don't need to remove outboard bearings.

New Veelos TD and TE v-belt lasts longer. Advanced construction of stud, cup-washer and T-screw provides added strength and durability—protects the new high-tensile strength link.

New Veelos TD and TE v-belt is perfectly balanced. Machine-cut sides and uniform links provide smooth, vibrationless, full-power delivery.

Put the new Veelos TD and TE v-belt on your D and E drives . . . prove to yourself that this v-belt does a better job for a longer time!

Get the complete story of this great, new v-belt. Send coupon for new 8-page illustrated bulletin.



MANHEIM MANUFACTURING & BELTING CO.
611 Manbel St., Manheim, Pa.

Please send copy of your new Veelos TD and TE v-belt catalog.

Name .....

Company .....

Address .....

.....

Veelos is known as Veelink outside the United States.

VEELOS
THE LINK
V-BELT

ADJUSTABLE TO ANY LENGTH — ADAPTABLE TO ANY DRIVE

BARBER COLMAN

ELECTRONIC

Humidity Controls

For new or existing systems

- Installed in leading plants throughout the nation for humidifying or dehumidifying
- Extremely sensitive—no drift or shift in control point
- Plug-in type sensing element
- Available with or without aspirating fan
- Two-position or proportioning (modulating) types
- Full complement of associated controls—thermostats, humidistats, control motors, motor-operated valves, program switches.

- Housed in trim, modern steel cabinet, ready to install.

ASK for Bulletin No. F-5173 ... for complete specifications and application data.

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Automatic Controls • Air Distribution Products • Industrial Instruments
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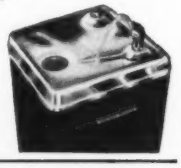
COOLER FOUNTAIN NEWS

VITREOUS CHINA TOPS NOW AVAILABLE

Popular 15-inch Line of Halsey Taylor Cooler Fountains now with Vitreous China Tops

Industrial users of Electric Coolers prefer the space-saving 15-inch size. Therefore, it's welcome news to know that Halsey Taylor now furnishes this popular size with Vitreous China Tops.

Gleaming vitreous china is always easy to keep clean, and—with the Halsey Taylor distinctive two-stream projector — these coolers are the most hygienic and health-safe you can buy.



See our catalog in Sweet's or write!

Stainless Steel Tops Also Available in 15-inch Cabinets or Cafeteria Models

THE HALSEY W. TAYLOR CO., Warren, Ohio

Halsey Taylor
COOLER FOUNTAINS

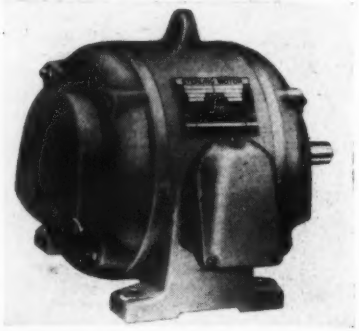
F-31

Polyethylene Bags Keep Sweaters Neat

SWEATERS ARE PROTECTED from dust, dirt, and handling by polyethylene bags made by N. T. Gates Co., Philadelphia, Pa. The printed colors remain permanent and attractive, and the bag may be used for other purposes after the sweater has been removed.

Circle T-45 on Reader-Service Card

Sterling Comes Out With NEMA-Standard Motors



NEMA-STANDARD MOTOR is being produced by Sterling Electric Motors, Inc., 5401 Telegraph Rd., Los Angeles 22, Calif. Now available in frame sizes 182 and 184, the motors feature more horsepower in less space, new terminal boxes, greater bearing protection, improved insulation, and a better construction. All frame sizes will be available by late 1955.

Circle T-46 on Reader-Service Card

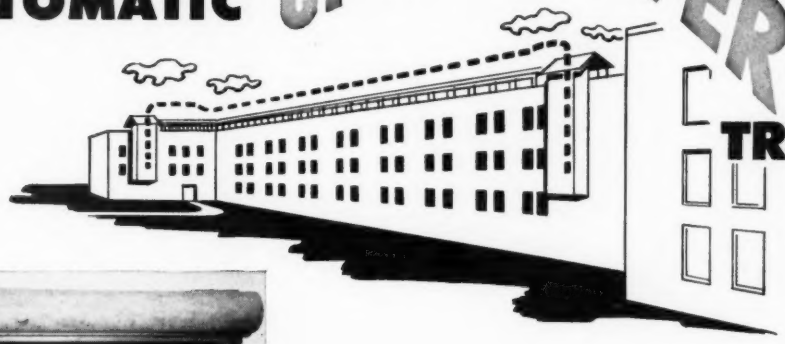
Electric Truck Works In Restricted Space

An electric fork truck that operates in a 7 ft. aisle and can pick up and deposit loads without straddling pallets or skids has been developed by The Yale & Towne Mfg. Co., Materials Handling Div., Philadelphia, Pa.

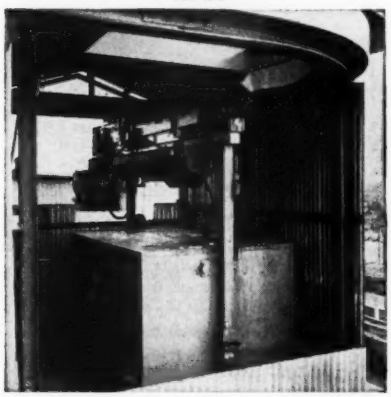
The new truck, called the Warehouser Extend-A-Load, has a 2,000-lb. capacity at a 24-in. load center.

Circle T-47 on Reader-Service Card

AUTOMATIC "UP AND OVER*" TRANSFER



Three boxes—450 lbs. each—are loaded in car. When doors are closed the car raises to carrier.

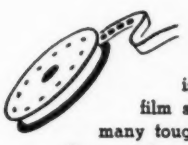


When car reaches upper limit, the Mono-Tractor propels carrier on the MonoRail to No. 2 mill.

SAVES $30,000 PER YEAR

Here is an "Up-and-Over"* system that eliminates 72 hours of handling labor per day. It automatically transfers 180 full bobbin boxes from three floors of one mill to one floor of another and returns the empties. Estimated savings in labor, trucks, floors and traffic congestion run upwards of $30,000 per year.

It is another of the many examples of American Mono-Rail engineering for low-cost handling within space limitation. Let one of our field representatives explain further the versatility and low maintenance of American Mono-Rail equipment.



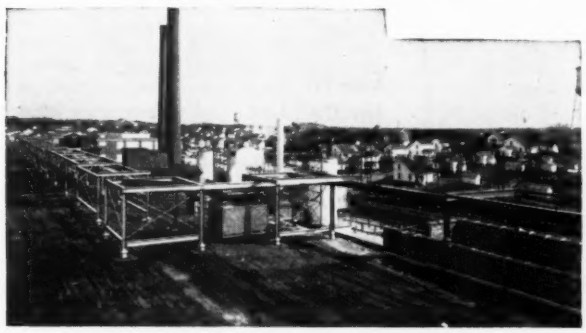
***"UP-AND-OVER"**

is the title of our 16-mm. sound film showing how MonoRail solves many tough handling problems. Please allow us three weeks to schedule showing.

AMERICAN MONORAIL COMPANY

OVERHEAD HANDLING EQUIPMENT

13108 ATHENS AVENUE • CLEVELAND 7, OHIO



Carrier travels at 50 f.p.m. around curves—150 f.p.m. on straight track with slow approach at towers.

At No. 2 mill car lowers to third floor for delivery of full boxes and return dispatch of empties.

for transmitting Power or
Motion at Right Angles

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Gear
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For Textile Machinery there are many potential power transmission applications where Crown Mitre Gear Units will represent a saving in equipment cost. Design engineers in scores of American industries are recognizing and utilizing the efficiency of these rugged, compact units, built for industrial use where long service and high load capacity are required.

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"For Those Who Want the Best"

Finest selection of hides available . . . choice of tannages . . . Thickness gauged to meet the most exacting requirements . . . excessive stretch removed . . . flexible waterproof splices . . .

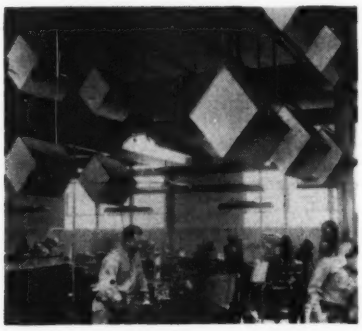
As specialists in Drafting Aprons for the Worsted System, our workmen are experienced in selection and matching of hide areas to give "balance" and long life.

A trial order will please you with our service.

The HAY Line TEXTILE LEATHERS

JAMES E. HAY
LEATHER CO., INC.
244 SMITH STREET • LOWELL, MASS.

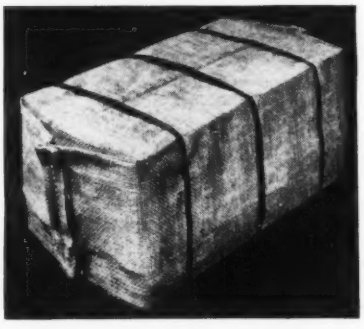
Sound-Absorbing Units Cut Down Noise Level



SONOSORBERS, which are sound-absorbing units, can be hung on 2-, 4-, 6-, or 8-ft. centers in any pattern to cut down the noise level in a room. Made by Sonosorber Corp., 21 S. 16th St., East Orange, N. J., the 24-in. units can be installed by a maintenance crew. They are nonflammable, easily cleaned, and are shipped broken down, 25 to a carton.

Circle T-48 on Reader-Service Card

Shipping Bag for Textiles



CALLED A BALE CUP, this bag is made by Chase Bag Co., 309 W. Jackson Blvd., Chicago 6, Ill., for long-distance shipping of textile merchandise. Goods are packed in the lower portion of the waterproof bag, and the top section telescopes over the bottom to form a double protective wall. For better identification, Chase will print on your label in two colors.

Circle T-49 on Reader-Service Card

Wool Spinning Frame

CONTINUED FROM PAGE 116

is up to 12 ins., and with wooden bobbins, up to 11 ins.

Three of the major improvements are:

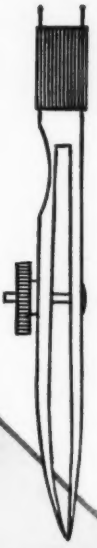
1. An instantaneous variable-speed frame control. Front rolls are driven from a four-speed transmission. With each change in speed, the twist increases 5 tpi; so twist and draft relationships remain constant. No gear changes are involved.

2. An instant reverse twist mecha-

AGAIN!

SUPREME ENGINEERING

multiplies knitting efficiency with this new striper...



MODEL SAAF-C

New, "One-Machine Knitting Mill" Has 32 Striping Feeds . . . Doubles Production . . . Gives Greater Pattern Variety . . . Unprecedented Convenience and Safety

Supreme engineering has a reputation for cutting cloth production costs by multiplying machine efficiency. The SAAF-C variable striper and pattern placer is the newest advance in that successful record.

HAS 32 FOUR-COLOR STRIPING BOXES, 32 PATTERN WHEELS, 32 PATTERN PLACERS

It's a super-improved version of Supreme's famous SAAF, with double the production capacity on certain fabrics, plus a terrific increase in pattern versatility. The SAAF-C combines in one machine all the knitting ability of all other Supreme stripers plus important new features which accelerate high quality output and simplify operation. In addition to variable striped fabrics, pattern wheel fabrics and Pattern Placer fabrics the Model SAAF-C knits lay-in fabrics, knit and tuck cloth, and knit and welt cloth.

NEW "STEP-DESIGN" YARNSTAND (PAT. PEND.) BOOSTS EFFICIENCY, SPEED AND SAFETY

Holds 128 cones, each clearly visible and easily accessible. Sufficient headroom for knitter to work beneath stand without stooping or bending. Rugged, stationary anti-vibration construction facilitates faster cylinder speeds, assures greater safety.

NEW STRIPING BOX DESIGN SIMPLIFIES SETTING

Design drum has been redesigned to permit sure, simple, manual setting... without screwdriver or wrenches. Adjusting studs have been replaced by a slideable jack which remains permanently in the drum and is easily shifted by hand to engage the proper striping finger. Eliminates misalignments. More compact design gives operator better view and easier access.

NEW PATTERN PLACER DESIGN GIVES FINGER TIP CONTROL

No tools needed to set pattern placer. Slideable studs, permanently self-retained in design drum, provide easy, finger-tip control of operation.

NEW SCISSOR-TYPE SYNCHRONIZED "NO-WASTE" CUTTERS

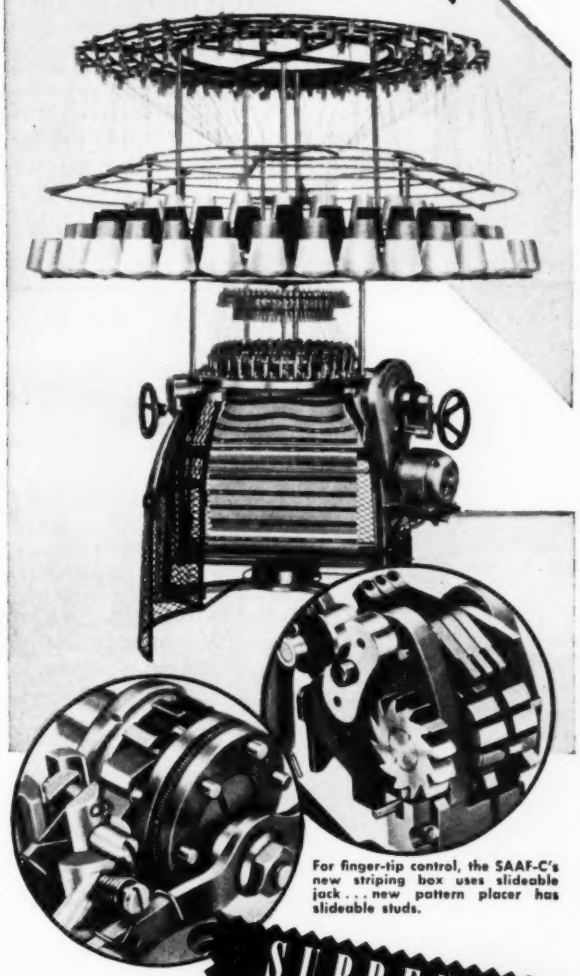
Each striping box has exclusive new scissor-type cutter which is positive and foolproof.

IMPROVED KNITTING ELEMENTS SYSTEM

Protects production quality. Eliminates interference from needles in welt position which causes "skips" or drop stitches in some 3-position pattern work.

MANY OTHER FEATURES

This quick look at the SAAF-C cannot cover all of the outstanding design and construction features embodied in this amazing machine. To get complete details contact Supreme, today.



For finger-tip control, the SAAF-C's new striping box uses slideable jack . . . new pattern placer has slideable studs.

SUPREME
KNITTING MACHINE CO., INC.
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The Mallack Co 711 S Tryon St Charlotte N C

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Write to PAGE FENCE ASSOCIATION in Monessen, Pa., Atlanta, Bridgeport, Chicago, Denver, Detroit, Los Angeles, Philadelphia, New York or San Francisco.

PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC.

THE YARNS YOU BUY GO INTO THE CLOTH

. . . not into waste!

TOMPKINS D-2

DOUBLE HEAD
SPRING NEEDLE
KNITTING MACHINE

SEE FOR YOURSELF . . . let us show you the Tompkins D-2 in production on whatever yarn or fabric you wish. Want to see samples of finished material? We'll knit up any material you specify — just send us the yarn!

OTHER TOMPKINS MACHINES

BEEF BAG KNITTER | HOCKEY CAP KNITTER | MULTIPLE FEED KNITTER

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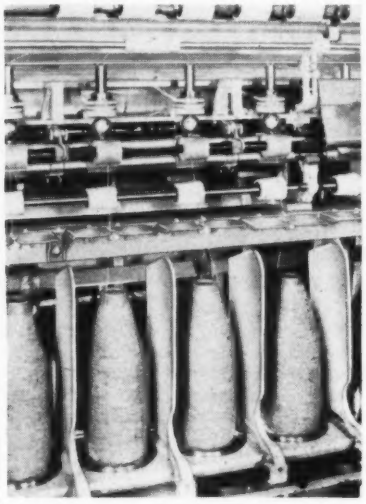
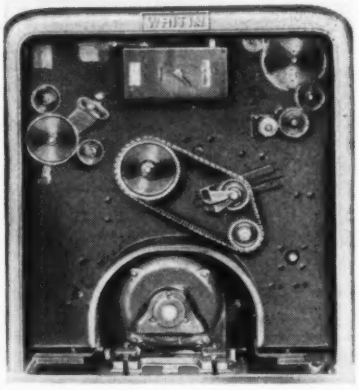
nism. It takes only a few seconds to change from S to Z twist or back. You just loosen a thumbscrew, turn the handle, and retighten the screw. No gear changes or repositioning chains are necessary.

3. A tachometer on each frame. The speed of the front rolls and twister head can be read directly for supervisory checks.



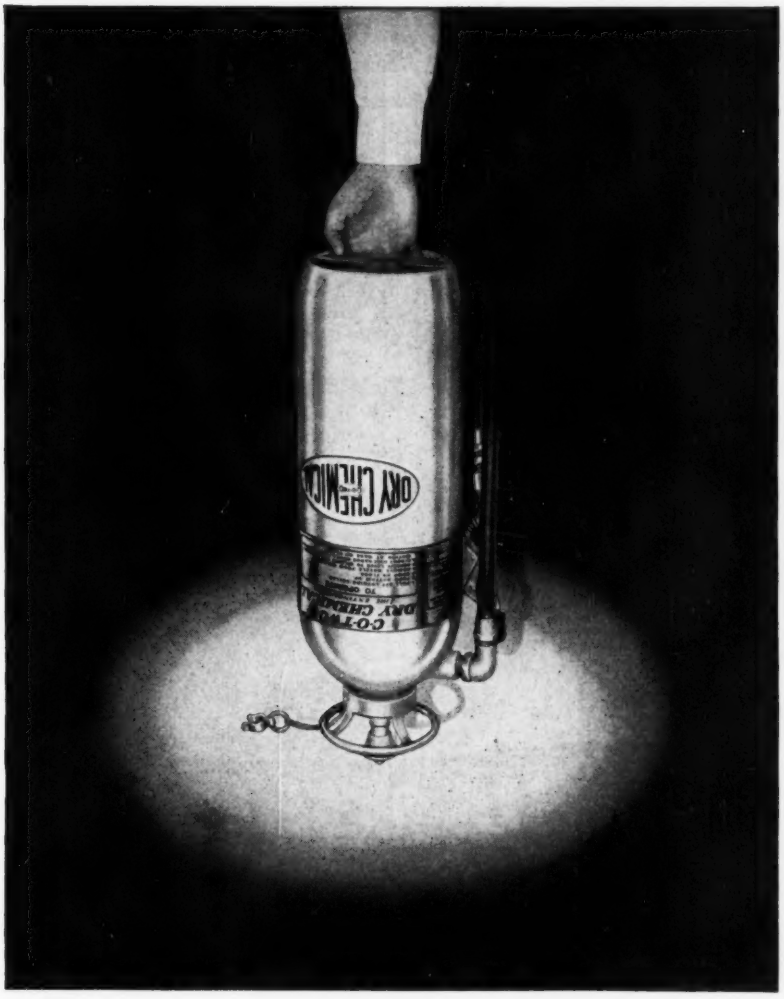
BALL-BEARING TWISTER HEAD can be accurately positioned in relation to the front rolls; the nippers are chrome tipped and can be quickly replaced. The twister head is driven by a variable-speed drive, and the speed can be changed while the frame is in operation. The deflecting rod has a traversing action, which reduces waste and wear. A revolving cleaner is used on front rolls.



SLOW-START MOTOR that operates through clutchless transmission (not shown here) is said to avoid ends down even after weekends. Twist and draft change gears have the same bore and pitch to reduce gear stock. An oil-free head end is provided by antifriction bearings, elimination of reversing chains and sprockets, and the use of a Lincoln Centro-Matic lubrication system. The builder motion is entirely enclosed inside the head.

Circle T-12 on Reader-Service Card

Bump that assures positive results



When fire strikes, seconds count . . . your fire extinguishers must be the right type and function properly from the very start . . . failure means serious losses.

The growing popularity of the highly effective powdered dry chemical fire extinguishing agent may be hampered by a drawback . . . settling or packing can occur after a lapse of time. However, with C-O-TWO Dry Chemical Type Fire Extinguishers there's no chance of this happening.

The exclusive inverting and bumping design of C-O-TWO Dry Chemical Type Fire Extinguishers provides mechanical breakage of the dry chemical by shifting its position in the cylinder. This outstanding mechanical breakage, plus continuous inert gas pressured agitation or fluffing of the skillfully blended free flowing dry chemical, guarantee lasting, foolproof fire protection.

No other brand on the market today gives you this extra margin for positive results. Inverting and bumping is only one of many unique design advantages that make C-O-TWO Dry Chemical Type Fire Extinguishers your best buy for killing flammable liquid and electrical fires, as well as surface fires involving ordinary combustible materials.

With C-O-TWO Dry Chemical Type Fire Extinguishers the heat-shielding dry chemical is a non-conducting, non-abrasive, non-toxic, finely pulverized powder compound . . . blankets fire instantly. Sizes range all the way from 4 to 150 pounds capacity . . . all fully approved by the Underwriters' Laboratories, Inc., Factory Mutual Laboratories and Government Bureaus.

Act now for complete free information on these top quality, sure-acting fire extinguishers. Remember fire doesn't wait . . . get the facts today!

C-O-TWO

MANUFACTURERS OF APPROVED FIRE PROTECTION EQUIPMENT

Squeez-Grip Carbon Dioxide Type Fire Extinguishers
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Every shade to your own liking . . . Why be limited to a few shades when *your* styling can sell goods . . . Select your shades and have us dye them.

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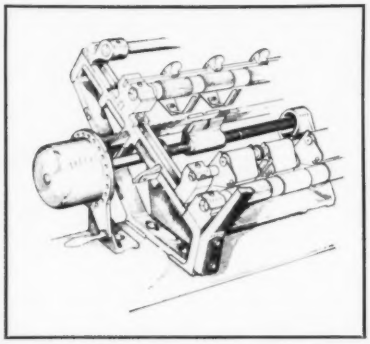
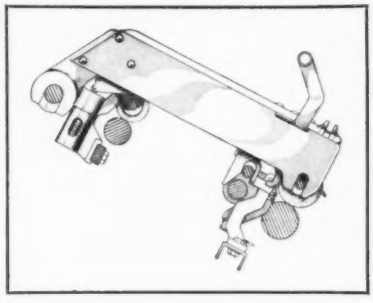
★

Worsted Roving Frame

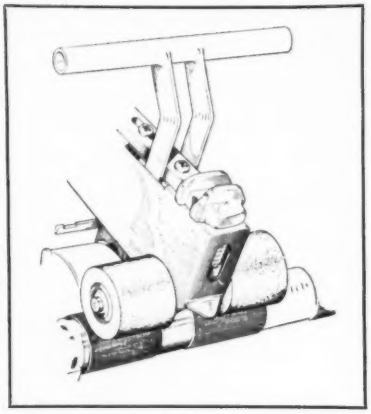
CONTINUED FROM PAGE 116



WITH NEW RATCH CONTROL, the ratch can be adjusted while the frame is in operation. The rolls are spread or brought together by turning the handle. No gears, bolts, or nuts are involved. A gauge gives a reading in fractional inches. Roll alignment is said to be exact for the full length of the frame.



NEW TOP ARM is mounted in the rear on a solid-steel back bar, and it controls the weight on all three lines of rolls. Cap bars, conventional saddles, and back bar blocks and arms have been eliminated to reduce maintenance. Rolls and clearers can be quickly removed from their supports. The handle up front releases the top arm.



WEIGHT SCALE in front of top arm gives a direct reading in pounds of weight on top front roll. The weight on front roll is adjusted by turning the Allen screw on top. Another Allen screw controls weight on top back roll. This arrangement is said to insure uniform weighting on each frame roll and between frames.

NEW! HERMAS Hi-Speed Selvage Trimmer

Today most cloth cleaning is done at the selvages.

We have given considerable time and engineering study to the development of a machine to perform the basic selvage cleaning function without becoming involved in a high cost piece of equipment.

This new Hermas Hi-Speed Selvage trimmer meets that need at speeds up to 150 yards per minute.

It has many efficient features including a guiding device which automatically keeps the cutting head in contact with the selvage despite variation in the line of cloth travel. Where full width shearing is required, conventional revolvers can be added to the selvage trimming machine.

New Selvage Marker

We are now manufacturing and selling the well known Superior Selvage Marking Machines.

This device produces, by means of ink, fine raised printing that has the appearance of being woven into the cloth.

Various models will mark selvages—or backs—of all types of fabrics from synthetics, cottons, silks to woolens, carpets, upholstery fabrics, etc.

Marking is done automatically at speeds up to 120 yards a minute.

HERMAS Jet Mixer

Mixes, on a new principle, dyestuffs, size, and other chemicals with the highest efficiency. Assures fast, *thorough* mixing without any Vortex.

Write for full description of these new machines.

HERMAS MACHINE COMPANY

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HAWTHORNE, NEW JERSEY

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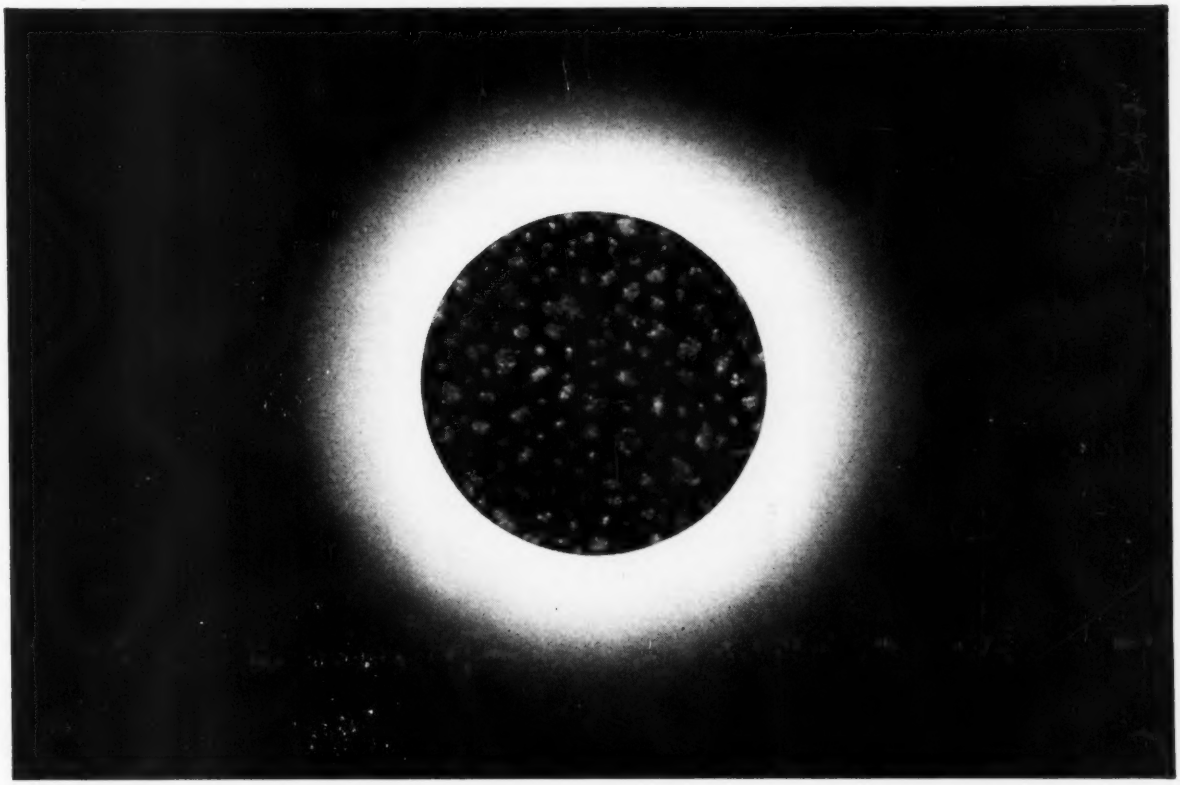
Fluorescent Lamps Age Only 20% After 7500 Hours...*do yours?*



You are looking through a 2600 power microscope at minute particles of phosphor powder. This powder coats the inside of your fluorescent lamps and controls the light output. For peak light output, both initially and throughout lamp life, the particles must be uniform to within a few microns. This uniformity, visible in the photomicrograph above, is one reason Westinghouse Standard Fluorescent Lamps age only 20% after 7500 hours of daily use. See for yourself how Westinghouse Lamps start bright, and stay bright even after 7500 hours . . . by trying some next time you order.

For details, contact your Westinghouse Lamp Supplier, or Westinghouse Lamp Div., Bloomfield, N. J.

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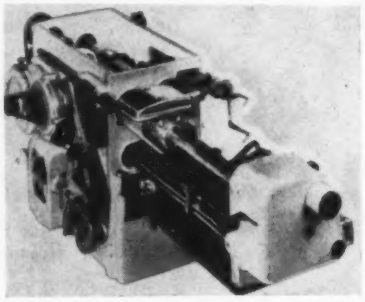
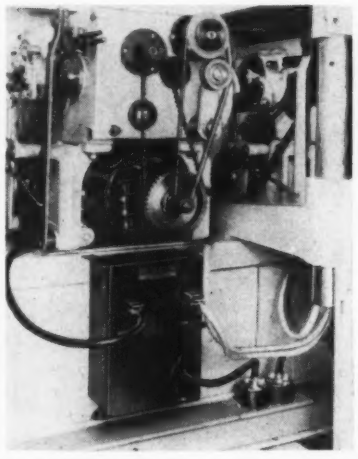
High-Speed Quiller

CONTINUED FROM PAGE 118



SPINDLE UNIT winds at 12,500 rpm., but speeds of auxiliary motions are below 1,000 rpm. for longer wear and reduced accident hazard. Auxiliary mechanisms are in external subassemblies that are easily replaced. Bobbin diameter is set from the dial on the pick-motion assembly (back left), which also controls bobbin taper (package sides are always parallel), and the forward movement of the yarn guide. A bobbin-head fan keeps the winding area free of fly.



EACH SPINDLE DRIVE is an individual 1/6-hp. brake-clutch motor and drive designed especially for the Speed-Matic. The spindle drive and doffing mechanism are driven by the same motor, and spindle rotation is closely controlled by the clutch and brake. The motors operate on 220 v.; line voltages are reduced by a transformer on each machine.

Keeping Looms Running

CONTINUED FROM PAGE 99

are now being done to modernize looms. Spring-type crank arms are being added to all looms.

Extra cross girders and rocker-shaft bearings are also being added. The center cross girder, on looms that have one girder and bearing, is being moved to one side of the center position; and an extra girder and bear-

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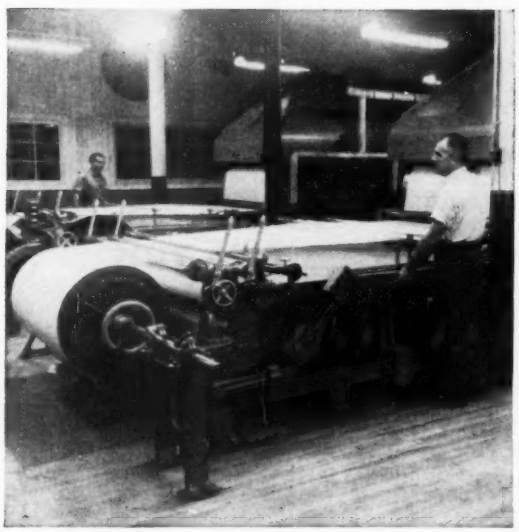
Size dope-dyed yarns with "ELVADEX" VINYL POLYMER for an off-loom finish that resists water spotting

PROVED ON OVER 100,000,000 YARDS OF FABRIC!



WARP SIZING WITH "ELVADEX" takes place at the slasher in the usual way. "Elvadex" is easy to prepare, easy to apply . . . requires no special techniques.

The double advantages of "Elvadex"* solve the problem of water spotting on popular loom-finished fabrics. "Elvadex" not only acts as a highly efficient size but also produces a durable off-loom finish that protects the fabric from water spotting. And this complete protection—from slasher to finished fabric—costs no more than you generally pay for the size alone!

"Elvadex," developed by Du Pont, was the first size for acetate warp yarns to effectively resist water spotting—a long-standing problem in the industry. Fully proved commercially, "Elvadex" imparts to taffetas a crisp fullness of hand and a scroop that enhances their sales appeal.

Du Pont technical representatives have worked closely with the successful development and application of "Elvadex" as an acetate warp size. They will be glad to tell you more about "Elvadex." Just contact our nearest District Office or send in the coupon below:

**Du Pont trade-mark. "Elvadex" was formerly known as ELCHEM 1273 alkali soluble vinyl polymer.*

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ing are being added on the other side. Two cross girders and bearings are being added to looms that do not have any cross girders.

Roll-and-shaft harness motions are being removed and replaced with clock-spring top motions. Four harnesses are being run with the clock-spring tops. At first, new harnesses with single rows of heddles were used with the spring tops. Now, the old harnesses with two rows of heddles used with the roll-and-shaft tops are being used with the spring tops. Weaving results at this mill are better with the old harnesses because the harnesses are heavier and sturdier.

The only problem with the old harnesses is that they are heavy for warp men to handle in placing warps in the loom. But since most warps are retied on the looms with portable tying-in machines, few harnesses have to be laid in.

Individual loom drives are already on many looms. The drives are now being placed on looms that do not have them.

Longer whiproll-shaft bearing brackets are being placed on the looms to extend the whiproll even with the back radius of the yarn beam head. Whiproll cam-follower hubs are also being extended. This new setup gives the warp yarn more room to open in the warp shed and also gives more time for ends to position themselves before they reach the drop wires after they are wound off the yarn beam.

Loom improvements are made only after test runs of new parts have been made and the results studied. For example, several types of harness motions and several loom drives were tested before a decision was reached on the types to be added to the looms.

Checking Parts Saves Supplies

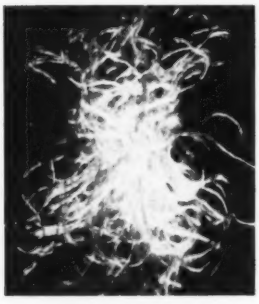
Even though loom motions are modernized every time cloth quality or production can be improved, supplies aren't wasted at the mill. Supply costs are controlled by checking all parts removed from looms.

When loomfixers take an order for a new loom part to the supply room, they turn in an old part for each new part they receive. The old part is placed in a used-parts bin. There's a used-parts bin for each second hand on each of the three shifts. The parts are inspected by the second hands at the end of each shift. Parts that can be rebuilt in the machine shop are placed in a truck to be taken to the shop.

Parts that have been removed from looms without reason are placed in another bin and are shown to the loomfixer who removed them when he comes back to work on his next

Cut...

THREAD WASTE
LIKE THIS



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With a Taylor-Stiles thread waste cutter you can cut all kinds of tangled and mixed length thread waste, and after opening the cut yarn you will have a fine fibre for further processing.

Write for illustrated folder showing Taylor-Stiles thread waste cutters and describing the principles on which they operate.

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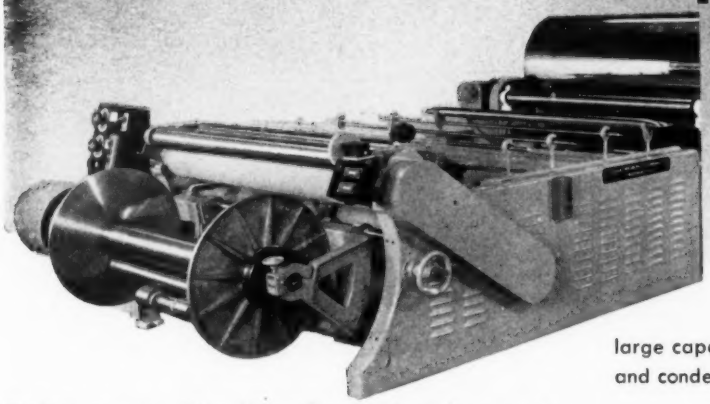

Cocker presents a New Warp Sizer evolved from twenty years of study and experience. It represents the progressive thinking and ideas of practical mill men operating hundreds of Cocker Warp Sizers on every type yarn.

1—Air operated carrier and delivery rolls

2—Air operated ironing compressor roll with finger tip variable pressure control

3—A fast and simple latch release for beam doffing requiring no change of position of beam carricge

4—Self locking split rod holders

5—Tension control at two points on the head end

CYLINDERS—This machine is available with 5, 7, 9, 11, 13, or more cylinders. Cylinders are furnished in ASME Code construction in any pressure up to 60 pounds. They are driven by double cut sprockets and roller chain and have large capacity headers with flexible tubing for steam inlet and condensate removal. Individual traps.

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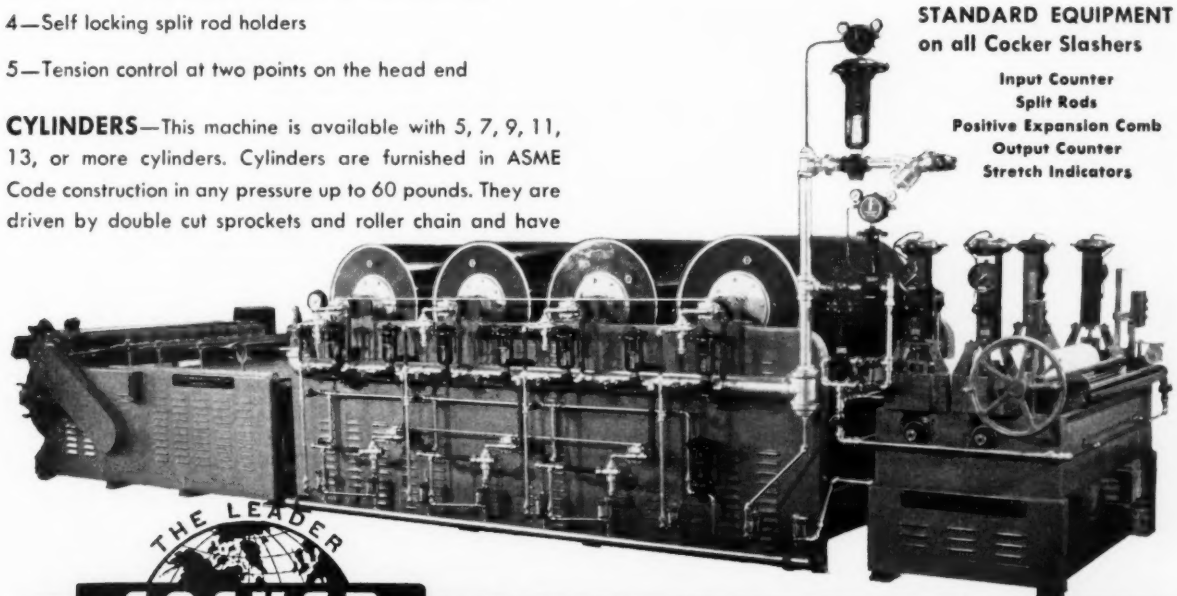
Stretch Indicators



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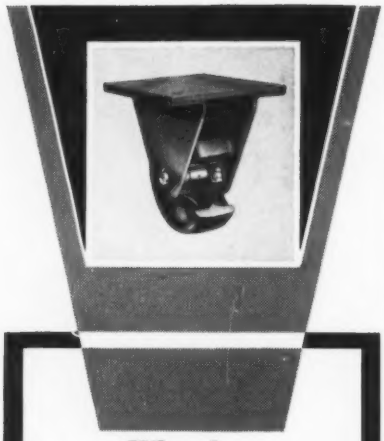

Why the Textile Industry looks to DARNELL for CASTERS & WHEELS

Darnell Engineers have given special study to Caster and Wheel usage in Textile Mills - have developed many models of casters and wheels to meet the demands of efficient, economical intra-plant movement of materials. It will pay you to consult a Darnell distributor when considering casters and wheels, either for new equipment or replacement.

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shift. Looms wearing parts needlessly are checked by the second hand. The worn-parts inspection also shows up bad oiling practices.

Results of loom modernization and the program to keep looms in good physical condition are: an average of 97% production and 2 to 3% second-quality cloth on over 1,300 looms weaving print cloth. All looms are 40 ins. wide. X-2 and X-model looms run at 182 ppm. and E-model looms run at 165 ppm.

Finishing Techniques

CONTINUED FROM PAGE 105

Since the distortion takes place inside the fiber, it can be best combatted by means of chemicals penetrating the fiber. Two types of materials effective in this application are monomeric resin formers and cellulose reactants (Fig. 4). The resin formers include most urea-formaldehyde and melamine-formaldehyde types and certain ketone aldehydes. Reactants include formaldehyde and certain difunctional urea-formaldehyde products. Not all internal resins and reactants are equally efficient, however; for example, internally deposited thermoplastic resin is ineffective and long-chain reactants are inferior to those that form shorter crosslinks.

While internal resins and reactants also reduce fabric shrinkage, the method of obtaining shrinkage control by the use of thermosetting surface resin does not improve crease recovery.

As a matter of fact, surface polymers of all types, both thermoplastic and thermosetting, as well as natural polymers, tend to reduce crease recovery of cotton and rayon fabrics. The point is illustrated in Fig. 5, which compares reactants, internal and external thermosetting resins, thermoplastic resins, and water-soluble polymers (starches) for improving crease recovery.

The exact principle by which the internal resins and reactants improve crease recovery is not completely known. Some authorities claim that the effect can be obtained only through actual crosslinking. Others believe that, while the reactants form crosslinks, the monomeric resin formers fill the pores and channels of the fibers with insoluble resin that to a considerable extent may be bonded to the cellulose by physical rather than by chemical linkages.

Agents Change the Cellulose

Regardless of the principle involved, reactants and resin formers effectively alter the cellulose, forming, from a

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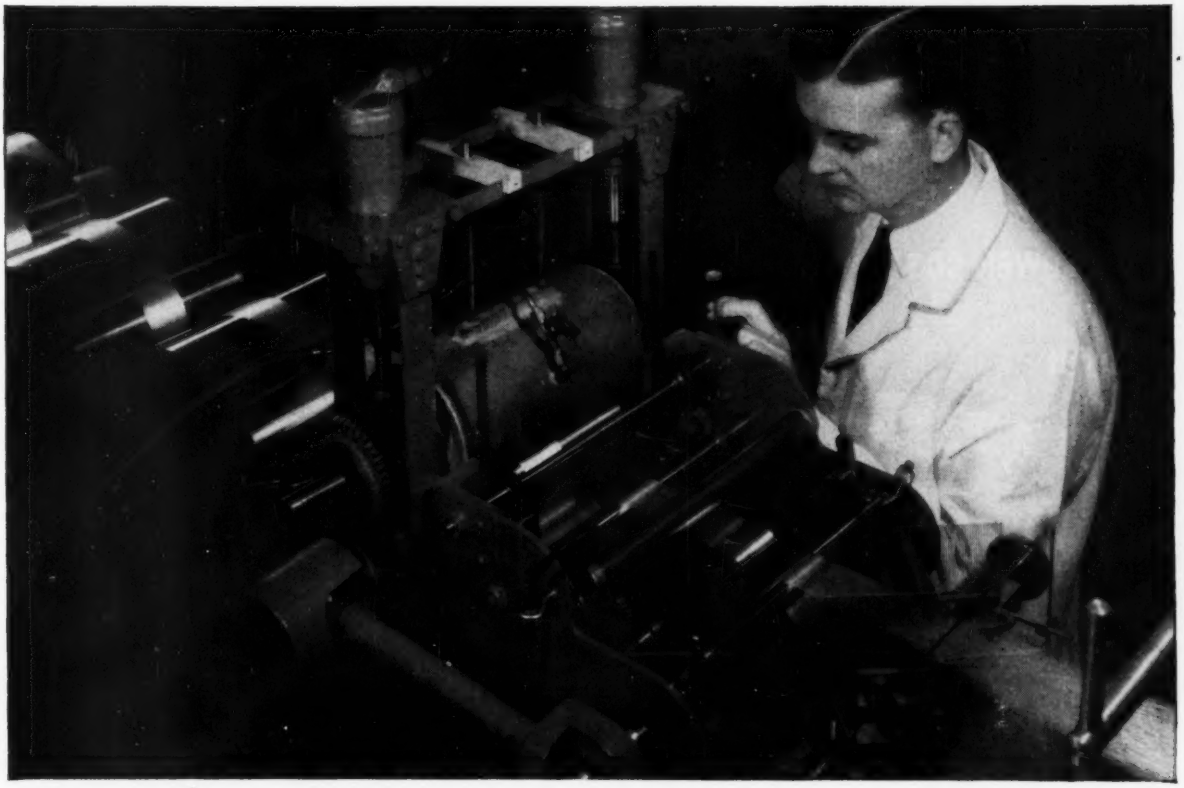

A view of the sizing and quetsch unit of the new pilot plant slasher assembly at Mellon Institute.

NEW PILOT PLANT SLASHER ASSEMBLY HELPS SOLVE TEXTILE PRODUCTION PROBLEMS

To supply the textile industry with up-to-the-minute factual information concerning starch sizes a highly integrated pilot assembly has been constructed at Mellon Institute in Pittsburgh.

This project is tremendously effective in the study of sizing of all types of natural and synthetic yarn manufactured from either staple fibers or continuous filaments. The flexibility of this entire assembly allows an approach to textile production problems from either a research or technical point of view.

This work is sponsored by the Multiple Fellowship program of Corn Products Refining Company. An interesting full-color brochure on this operation is available. Write today for your copy.

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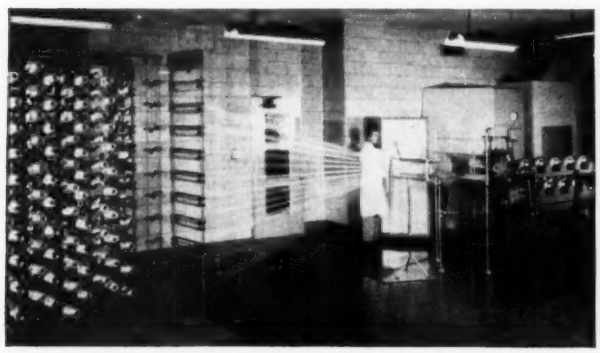
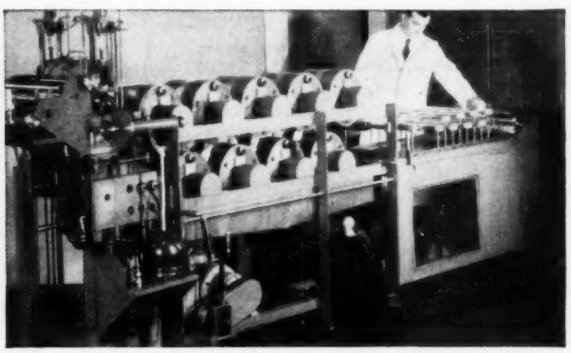
17 Battery Place, New York 4, N. Y.



Major components of the entire slasher assembly are shown in the above photo.



Another view of the highly flexible pilot plant slasher assembly. Note duplicate control panel by size unit.

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Manufacturers of VINOL Polyvinyl Alcohol — VINAC Polyvinyl Acetate in Solid, Solution and Emulsion Form — Phenol Formaldehyde Solutions

practical standpoint, a new fiber. As a result of the treatment, water pickup is reduced from 100% to less than 50% and the fiber is stiffer and less yielding, as shown by the altered stress-strain curve (Fig. 6). However, despite the stiffer fibers, the fabric is not appreciably stiffened if surface resin is absent.

In general, the same resins and reactants and the same processing techniques that impart crease recovery to rayon fabrics are also suitable for use on cotton. One major distinction between cotton and rayon, however, is the greater susceptibility of cotton to acid damage. Cotton will suffer excessive strength loss when too much catalyst or too strong a catalyst is used. Rayon, on the other hand, is fairly resistant to such damage. Moreover, for reasons that are not clear, some cotton fabrics seem more susceptible than others to this type of damage. It is important, therefore, in resin-treating cotton to employ a proper catalyst, preferably of the organic amine type.

Crease Resistance

Thus far we have considered only crease recovery; that is, the ability of the fabric to recover from a sharp crease. The term crease resistance, however, has little to do with crease recovery but implies, rather, a springy reaction when the fabric is compressed to less-than-creasing deformations.

Crease resistance is related to fabric stiffness. A crisp fabric, which does not bend readily, resists creasing and may be termed crease resistant. Such a finish can be obtained by using a surface polymer. Starching shirts and blouses to enable them to hold their shape is a time-honored application. However, once a starched fabric is creased, it has very poor crease recovery.

Thus we face the dilemma that if we stiffen the fabric to improve its crease resistance, we lower its crease recovery. As a result, most crease-proofing formulations represent a compromise. They generally include four components: (1) the internal resin or reactant to impart crease recovery; (2) a surface polymer to provide the desired crease resistance; (3) a softener to maintain tear strength; and (4) a catalyst to set the resin.

A thermosetting surface polymer may be used, although at present a water-soluble polymer that can be insolubilized by reaction with a portion of the internal resin or reactant is in general use. Hydroxyethyl cellulose

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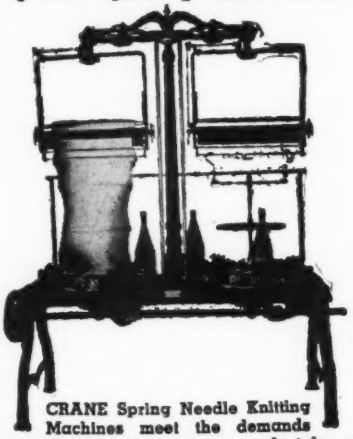

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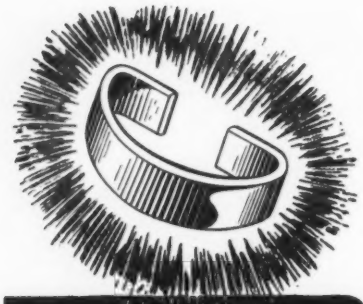

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and polyvinyl alcohol, in addition to various thermoplastics, are frequently used as surface polymers.

This discussion of finishes to impart crease recovery and crease resistance has been limited to cotton and rayon, which can be greatly improved by such treatment. The hydrophobic fibers, in general, have better crease recovery to begin with, which is fortunate because they are difficult to improve. Crease resistance, however, can sometimes be improved by treatment with suitable thermosetting resins.

Side Effects

Chemical treatments frequently impart to the fabric one or more side effects that may be desirable or undesirable.

When a surface polymer is employed to stiffen a fabric, frequently there are improvements in warp breaking strength and resistance to flat abrasion and reductions in crease recovery and tear strength, as shown in Table I. The stiffenening itself can be an adverse effect. If a surface polymer is applied for some reason other than for stiffening (for example, to feltproof wool), the resulting stiffness may be undesirable. In other cases, increased body and fullness may be a welcome addition to shrinkproofing rayon.

Sometimes the side effects, particularly the undesirable ones, are not noticeable immediately but only after weeks or months of fabric use. Such changes in the finish may be caused by air oxidation or other chemical reactions induced by the action of heat or light on the finishing agent.

For example, Fig. 7 shows the effect of heat and light on the stiffness of fabrics finished with a variety of thermoplastic emulsion polymers. For convenience, accelerated tests were used; in one test the cloth remained in an oven at 120° C. for 12 hrs., while in the other the fabric was subjected to 50 and 100 hrs. of light in

Table II
Modification of Rayon Challis Fabric With Resins and Reactants

Treatment	Catalyst	Shrinkage	Crease recovery	Warp breaking strength	Trapezoid tear	Abrasion resistance
		% warp	%	lbs.warp	lbs.warp	TBL cycles
Control	None	10.3	48	47	9.2	2,830
(urea-formaldehyde)	(NH_4Cl)					
5%	0.5%	4.9	62	47	7.8	1,240
10%	0.5	3.9	74	51	6.9	930
15%	0.5	2.1	81	55	6.2	550
(modified UF reactant)	(NH_4Cl)					
3%	0.5%	6.0	64	49	7.5	1,690
5%	0.5	5.0	69	46	7.5	1,060
10%	0.5	2.1	80	49	6.0	450
(melamine formaldehyde)	(NH_4Cl)					
5%	0.5%	5.6	66	49	8.3	1,580
10%	0.5	3.3	74	54	6.8	810
15%	0.5	1.9	79	56	6.5	310
(ketone aldehyde)	(Na_2CO_3)					
5%	0.5%	7.3	45	44	6.3	1,150
10%	0.5	5.5	49	42	5.5	800
15%	0.5	4.3	50	39	4.9	620
(Glyoxal)	($H_2C_2O_4$)					
3%	0.3%	7.3	56	40	4.0	850
5%	0.3	2.2	67	41	3.4	290
10%	0.3	1.1	77	41	2.5	80
(formaldehyde)	(NH_4Cl)					
2%	0.2%	8.9	49	49	6.9	1,960
5%	0.2	3.6	71	41	3.2	380
10%	0.2	2.2	75	34	1.4	180

Here's How Du Pont's Exclusive Cloth Heater

Assures Uniform Bleaching

This unique feature is one reason why more Du Pont Peroxide Bleaching Systems are used throughout the world than any other continuous system!

You are assured uniform bleaching—independent of cloth weight or operating speed—because Du Pont's exclusive cloth heater is designed to heat each yard of cloth *before* it moves into the storage "J" Box. Uniform heating, of course, means uniform bleaching and dyeing.

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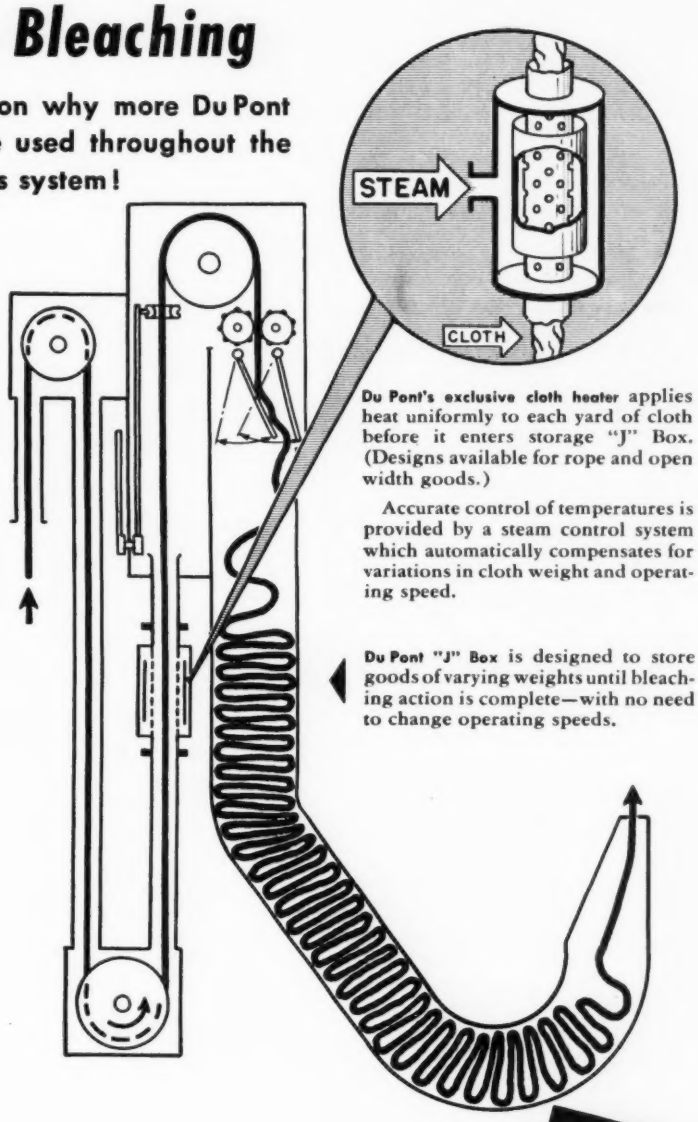

Du Pont's exclusive cloth heater applies heat uniformly to each yard of cloth before it enters storage "J" Box. (Designs available for rope and open width goods.)

Accurate control of temperatures is provided by a steam control system which automatically compensates for variations in cloth weight and operating speed.

Du Pont "J" Box is designed to store goods of varying weights until bleaching action is complete—with no need to change operating speeds.

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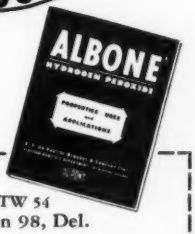

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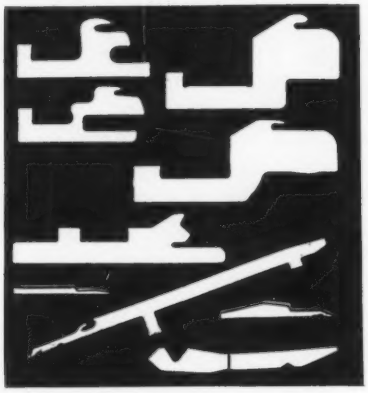

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the Fade-Ometer. Two of the finishing agents that originally gave soft finishes stiffened tremendously after exposure to light; another doubled in stiffness after being heated. The effect of heat and light on the whiteness of the same fabric is illustrated in Fig. 8. Several finishes were considerably darkened by yellowing or browning.

Fabrics treated with softeners may show similar side effects. Tear strength is usually improved, and crease recovery may be enhanced. One of the most common adverse effects is yellowing with heat. The cause of this defect is probably a poor choice of fatty raw material or a peculiarity of the solubilizing group. Cationic softeners generally contribute to more discoloration than do the anionic type. Lightfastness of dyes may also be affected by certain softeners.

Side Effects May Be Multiple

The most intensive studies of side effects have been made on thermosetting resins and reactants that cause major changes in the properties of cellulosic fabrics. Typical data showing the effects of various types of internal resins and reactants on shrinkage control, crease recovery, warp breaking strength, tear strength, and abrasion resistance are given in Table II. Note that in each case a gain in shrinkage control is accompanied by greater crease recovery, reductions in tear strength and abrasion resistance, and varied effects on warp breaking strength.

When a finish is being considered, there should usually be a compromise between desired and undesired properties. The importance of this fact is sometimes overlooked. (For example, in a case of a creaseproofed rayon for outerwear, a fabric containing 15% resin for crease recovery showed a desirable bulk and body attractive to the customer. The converter, however, called for even more body in the hope of getting the jump on his competition. Unfortunately, with 22% resin solids, the fabric had such poor abrasion resistance that wear life was seriously affected.)

In addition to affecting the physical properties of a fabric, side effects may alter the dyeing properties. For example, resin treatment of an undyed cotton or rayon fabric may immunize the cloth and reduce its affinity for direct dyestuffs so that it can no longer be dyed to a dark shade. Resin applied to dyed fabric may reduce the lightfastness of the dye, although in a few cases the lightfasness of specific dyestuffs may be improved. One of the most important side effects concerning dyeing is the washfastness improvement of direct dyestuffs resulting from aftertreatment with a resin or reactant.

Table III
Improved Washfastness From Color-Fixer-Resin Combination

Treatment	Dyestuff A	Dyestuff B	Dyestuff C
None (control)	10	10	10
1% (color-fixing agent)	3.5	4	3
2%	3	3.5	2
8% reactant	8	5	3
8% reactant plus 1% color-fixing agent	2.5	1.5	1.5
15% UF resin	9	6	4
15% UF resin plus 1% color-fixing agent	2	1.5	1 5

Improved Fastness of Dyes

For some years several products have been marketed that improve the washfastness of selected direct cotton dyes. Such materials are usually cationic resinous substances containing copper (or they are employed along with copper salts). They serve to bond the dyestuffs more tightly to the fabric so that fastness to a 140° or even a 160° wash, depending on the dyestuff, is attained.

Thermosetting resins as a class also tend to increase the washfastness of cellulosic dyestuffs, possibly by reducing swelling of the fiber, although the effect varies with the choice of dyestuff. Most important, the effects are additive; the use of proprietary color fixers in combination with a thermosetting resin, in a concentration sufficient to shrinkproof the fabric, may result in better washfastness of cottons or rayons than can be obtained with either component alone.

The effect is illustrated in Table III, which shows the improvement in washfastness (160°) of cotton fabrics dyed with several dyestuffs. The scale is an arbitrary one based on 10 units (marked color loss) to 1 unit (negligible color loss). The dyestuffs were chosen from a list of dyes recommended for use with the color fixers, but they were not necessarily ideal for fixation with resin alone. The treatment is usually given in a separate operation after dyeing.

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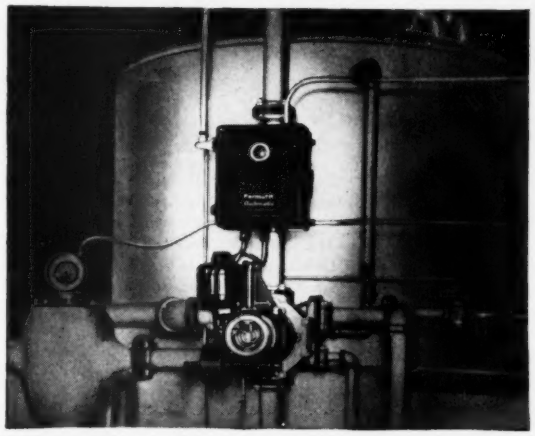

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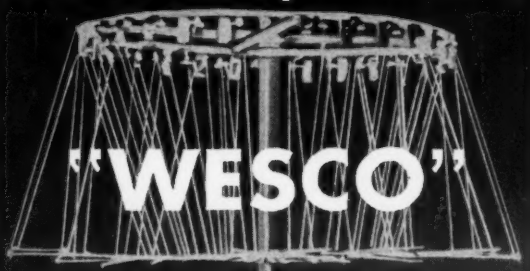

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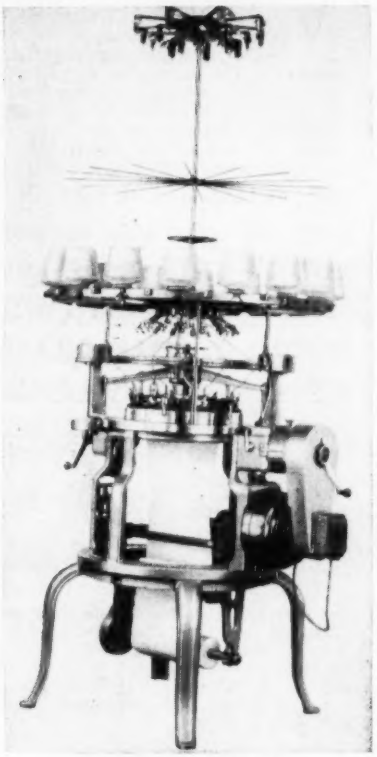

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WESCO stop motions were especially designed and built to give perfect protection against knitting breakdowns, broken needles, unnecessary press-offs, smashes and wasted yarn. Always specify WESCO for trouble-free production when ordering new machines.

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News OF THE MONTH

Machine-Leasing Plans

► A five-year leasing plan has been announced by Universal Winding Co., Box 1605, Providence, R. I. At the end of that period, the machinery can be bought at the going market price or released. A deferred payment plan (up to seven years) was also announced by Universal.

► Warner & Swasey Co., Cleveland, Ohio, has announced it will lease its textile machinery. Three seven-year plans are offered with cancellation possible after two, three, or four years. A 10% cash payment is required as security, and rent does not apply to purchase price. Auxiliary equipment such as the new filling-mixing unit is not included in the leasing plan.

Court Upholds Mount Hope

After Mount Hope Finishing Co. moved from North Dighton, Mass., to Butner, N. C., under a new corporation in 1951, the National Labor Relations Board ruled that the company had moved to avoid bargaining with Textile Workers Union of America, (CIO); and the board ordered Mount hope to rehire laid-off workers and pay back pay and moving expenses to Butner. That order has been set aside by the U. S. Court of Appeals, with the opinion that the move was made for sound economic reasons and not for the purpose of evading responsibilities; ". . . long before the union made its appearance the business was deteriorating and operating at a loss."

Consumers Hold the Key

Prospects for profitable 1954 operations in the cotton branch of the textile industry are encouraging, according to W. J. Erwin, president of Dan River Mills. Mr. Erwin stresses that how consumers decide to spend their incomes will have a major effect on whether or not this is a satisfactory year.

Measures Stiffness

DRAPE-FLEX STIFFNESS TESTER measures how a fabric will drape under its own weight and how stiff it will feel when flexed by hand. The tester was developed at Clothing Supply Office, U. S. Naval Supply Activities, Brooklyn 32, N. Y., under the direction of Jack J. Press (right), fiber specialist. Test results compare closely with subjective stiffness ratings. Commander J. Burkhardt, Jr., (left) is commanding officer at the station.

Red Tag Means Hot Bale

A campaign to strengthen the red-tag system for marking hot cotton bales is being carried on by the National Cotton Council. The Council recommends that red tags be used only to label fire-packed bales for a 72-hr. isolation period.

Fire-Fighting School

Eleven industrial-fire-fighting training schools will be held this year at Ansul Chemical Co., Marinette, Wis. Each school lasts three days. Starting dates: May 24; June 14, 21, and 28; July 19 and 26; August 16, 23, and 30; September 13 and 20. Safety directors are trained in the use of dry-chemical extinguishers. The only cost is for transportation and living expenses.

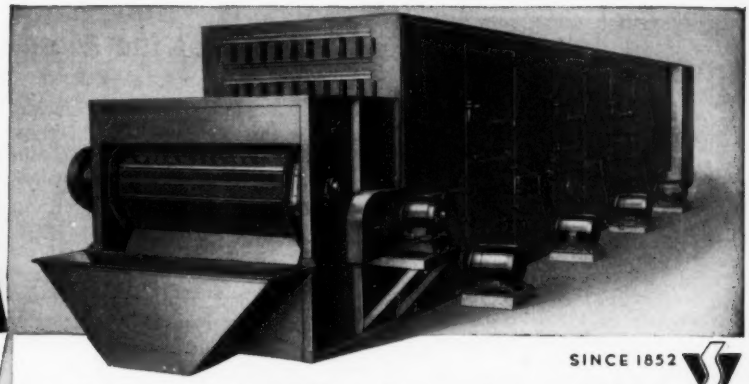
Right-To-Work Laws

Two more Southern states, Mississippi and South Carolina, have passed "right-to-work" legislation. In general, the laws state that every person has a free choice in joining or not joining a labor union; and employment cannot be denied to a person because he doesn't belong to a union. Sixteen states now have similar laws.

Economic Cushion

Textron, Inc., has acquired the MB Mfg. Co., New Haven, Conn., manufacturers of vibration-control equip-

for WOOL, COTTON, RAYON and other Synthetics and LOOSE MATERIALS



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Employs the counter-air-flow heating principle to provide rapid, economical drying.
New, fast, completely automatic.
The material and the air drying it enter the dryer at opposite ends and travel through in opposite directions. Wet material is subjected first to wet, hot air, then progressively to dryer, cooler air, emerging DRY, at ROOM TEMPERATURE.
No heat loss . . . No overheating of dry material.
The most efficient machine ever developed for drying loose materials.
For complete information please write for Bulletin No. 183.

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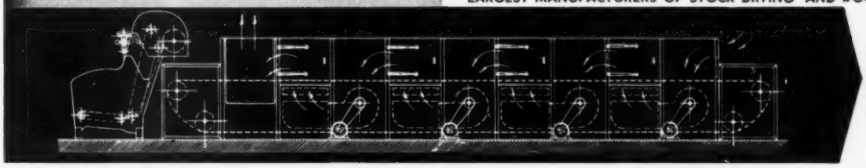
LARGEST MANUFACTURERS OF STOCK DRYING AND WOOL WASHING EQUIPMENT IN AMERICA



Schematic diagram of the SARGENT CONTRA-FLOW SINGLE APRON DRYER showing direction of travel of air through fans and heating elements. Material travels in opposite direction.

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OCTOBER 4-8, 1954

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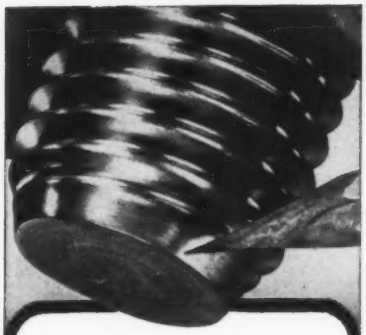

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Dropping, knocking against metal surfaces and faulty line-up are major causes of damaged threads. Allen's new unthreaded leader point substantially reduces the causes of screw thread injury, or damage to threaded holes. Grip Heads, precision fit sockets that adhere to the key, *plus* the new leader points, make Allens the world's easiest starting cap screws, particularly in inaccessible spots. Sold *only* thru leading Industrial Distributors.

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NEWS *of the Month*

(Continued)

ment, in a move "to protect stockholders against the severe fluctuations in the textile industry." This company is the third nontextile company acquired by Textron.

"For a Full Century"

The oldest trade organization in America, the National Association of Cotton Manufacturers, will celebrate its 100th birthday this month. "For a full century," said Seabury Stanton, president of Hathaway Mfg. Co. and chairman of the Centennial (Somerset Hotel, Boston, May 19 and 20), "NACM has battled constantly to maintain the textile welfare of New England. . . . Our payroll is still at . . . $189-million per year and our production still . . . more than 1-billion yards."

Injuries Down 9%

Final 1953 figures for the textile section of the safety contest sponsored by the National Safety Council show an accident-frequency rate of 4.43, which is a 9% drop from 1952. The figures cover 238 contestants and 282-million manhours.

Thirty-nine perfect records were hung up, and 35 citations were awarded for reductions in the injury-frequency rate.

Why Plants Move South

The main reason for migration of the textile industry from New England to the South, according to Dr. Robert W. Patterson of the University of South Carolina Bureau of Economic Research, is the manpower advantage. "No matter how much emotional attachment New Englanders have for the textile industry, the drift of plants . . . will continue."

New Fabrics

► In Australia, the light yellow variety of canna is being processed into fabric for carpet backing without spinning or weaving operations. The full stalk, up to 5 ft. long, is being used. The fibers are pressed and the canna resins bind them together.

► Equipment for weaving glass roving has been developed by Bigelow Fiber Glass Products, a division of Bigelow-Sanford Carpet Co., Inc. Called Rovcloth, the roving fabric does not require heat cleaning and refinishing as do glass-yarn fabrics. The fabrics are used as a plastic-reinforcing material.

Research

► An international scientific conference on wool textile research has been called for Sydney, Australia, in September, 1955, sponsored by the Australian Wool Bureau and Textile Research Laboratories. Information is available from the Officer-in-Charge, ASLO, 1800 K St. N.W., Washington 6, D. C.

► Recommendations for cotton research recently made by the research advisory committee of the USDA included: (1) improve weatherproofing and rotproofing treatments, (2) develop new equipment for cleaning mechanically harvested cotton, and (3) reduce crystallinity of cotton to increase its dye affinity and elasticity.

► A textile research laboratory has been dedicated at the Massachusetts Institute of Technology. Called the Charles T. Main Textile Research Laboratory, it will carry on research at MIT on fiber, yarn, and fabric properties, with emphasis on applied mechanics, microscopy, and quality control.

Fibers

► Du Pont has adopted Taslan as a trademark for textured yarn made by its bulking process.

► Ban-Lon is the trade name given to the process controlled by Joseph Bancroft & Sons Co. for crimping natural and synthetic fibers. Fourteen U. S. companies and one Canadian company have been licensed to use the process.

► A polyethylene yarn called Courlene is being produced commercially in England by Courtaulds Ltd.

"Saving waste yarn is a nice hobby, dear, but don't you think stamp collecting would be less cumbersome?"

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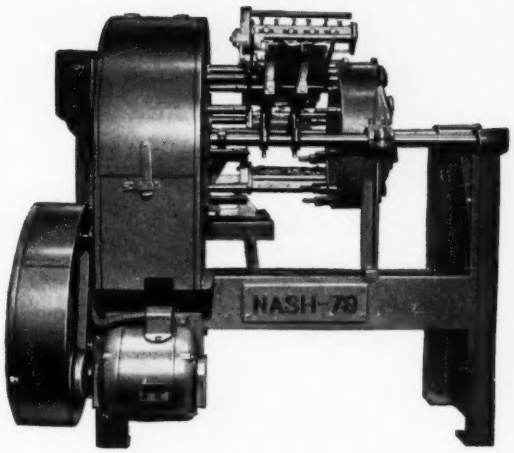

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- Trouble free operation.
- Preserves original finish coating of quills — no harsh abrasive action during operation . . .
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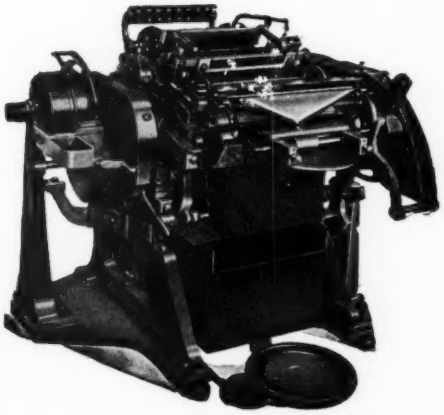

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NEWS *of the Month*

(Continued)

Textile Schools

► The summer session at Lowell Technological Institute will feature a Professional Advancement Program from June 15 through July 16. Courses of interest to mill men include a textile workshop for research people, and courses in textile testing, woolen carding and spinning, reused and reprocessed fibers, and labor-management problems.

► Applications for four-year scholarships to Philadelphia Textile Institute have to be filed by May 15. These scholarships, 18 in all, are worth $1,800 each and are awarded competitively to high-school seniors.

► The 10-page section on silk in the Encyclopedia of Chemical Technology (Interscience Encyclopedia, Inc., Brooklyn, N. Y.) was written by Prof. Arthur C. Hayes of the School of Textiles at N. C. State College. The section covers all aspects of silk production and processing.

Textile Calendar

National Assn. of Hosiery Manufacturers, annual meeting, Claridge Hotel, Atlantic City, N. J., May 3 and 4.

Hosiery Industry Conference, annual conference, Claridge Hotel, Atlantic City, N. J., May 3 and 4.

President's Conference on Occupational Safety, Washington, D. C., May 3 to 6.

Air Pollution Control Assn., annual meeting, Patten Hotel, Chattanooga, Tenn., May 3 to 6.

British Industries Fair, industrial section, Castle Bromwich, Birmingham, England, May 3 to 14.

North Carolina Safety Conference, Raleigh, N. C., May 4 to 6.

The Fiber Society, spring meeting, Institute of Textile Technology, Charlottesville, Va., May 5 and 6.

American Society of Training Directors, annual conference, Schroeder Hotel, Milwaukee, Wis., May 5 to 7.

Welding and Allied Industry Exposition, Memorial Auditorium, Buffalo, N. Y., May 5 to 7.

National Assn. of Woolen and Worsted Overseers, semiannual convention, Hotel Manger, Boston, Mass., May 7 and 8.

STA, Piedmont Div., Hickory, N. C., May 8.

TOE of Georgia, A. French Textile School, Georgia Tech, Atlanta, Ga. May 8.

Swiss Industrial Fair, Textile Machinery Exposition, Basel, Switzerland, May 8 to 18.

AATCC, New York Sect., Swiss Chalet, Rochelle Park, N. J., May 14 (moved up from May 21).

Western Safety Conference, Spokane, Wash., May 16 to 19.

Basic Materials Exposition, International Amphitheatre, Chicago, Ill., May 17 to 20.

NACM, 100th anniversary, Somerset Hotel, Boston, Mass., May 19 and 20.

ASME, Textile Engineering Div., spring meeting, Hotel Sheraton, Boston, Mass., May 21.

AATCC, Philadelphia Sect., annual outing, Manufacturers' Golf and Country Club, Oreland, Pa., May 21.

Operations Research Society of America, annual meeting, Edgewater Beach Hotel, Chicago, Ill., May 21 and 22.

Rhode Island School of Design, Textile Club's annual banquet, Narragansett Hotel, Providence, R. I., May 22.

Office Machinery and Equipment Exposition, Kiel Auditorium, St. Louis, Mo., May 24 to 27.

SCTMA, annual convention, The Cloister, Sea Island, Ga., May 27 to 29.

International Congress of Man-Made Textiles, Paris, France, May 31 to June 3.

Canadian International Trade Fair, Toronto, Ont., Canada, May 31 to June 11.

Society of the Plastics Industry, Public Auditorium, Cleveland, Ohio, June 7 to 10.

The Textile Institute, annual conference, jointly with the Society of Dyers and Colourists, Grand Hotel, Scarborough, England, June 8 to 11.

STA, annual convention, Ocean Forest Hotel, Myrtle Beach, S. C., June 10 to 12.

Philadelphia Textile Institute, annual alumni reunion, Manufacturers Golf and Country Club, Oreland, Pa., June 11.

ASTM, annual meeting, Sherman and Morrison Hotels, Chicago, Ill., June 13 to 18.

Management Course, College of Engineering, State University of Iowa, Iowa City, Iowa, June 14 to 26.

National Safety Council, Textile Sect. committee meeting, New York, N. Y., June 15 and 16.

Professional Advancement Program, Lowell Tech, Lowell, Mass., June 15 to July 16.

World Congress on Surface-Active Agents, Sorbonne, Paris, France, Aug. 30 to Sept. 3.

Canadian Textile Seminar, Queen's University, Kingston, Ontario, Sept. 9 to 12.

The Fiber Society, fall meeting, in conjunction with Textile Technical Federation of Canada and Canadian Assn. of Textile Colorists, McGill University, Montreal, Canada, Sept. 13 and 14.

AATCC, national convention, Atlanta Biltmore Hotel, Atlanta, Ga., Sept. 15 to 18.

Industrial Packaging and Materials Handling Exposition, Competition, and Short Course, Chicago Coliseum, Chicago, Ill., Sept. 27 to 30 (course), Sept. 28 to 30 (exposition).

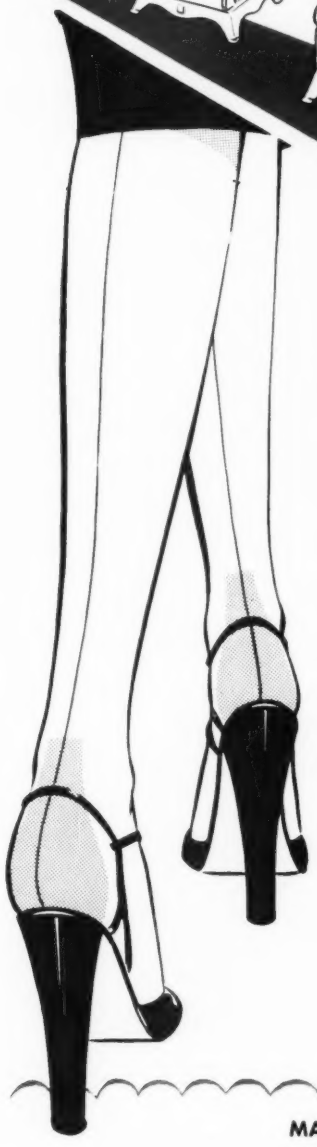
Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 4 to 8.

N. C. Textile Mfg. Assn., annual meeting, Carolina Hotel, Pinehurst, N. C., Oct. 14 and 15.

TOE of Georgia, A. French Textile School, Georgia Tech, Atlanta, Ga., Oct. 23.

YOUR PRODUCTION LINE FOR HIGHER **HOSIERY PROFITS**

for that desirably dull luxurious look!



THE WILDMAN 75 GAUGE FULL FASHIONED HOSIERY MACHINE

For high gauge market selling, the WILDMAN 75 is your best buy today.

In the 75 gauge, the same size yarn is used as in the lower gauges, but naturally it is tighter knit. The resulting elasticity determines the comfort, the fit, the special pleasure the owner receives from her stockings — and eventually the wear. Add these features up and you're selling the height of elasticity, beauty, wear — to a demanding, selective market.

These stockings of 12 denier please the consumers' 'taste' in fine hosiery — move your inventory — keep your market alive — put you, as a producer, in line for top profits in the highest gauge quality market.

High production, efficient, economical, automatic-in-operation — that's your WILDMAN 75 . . . Inquire today for complete details.

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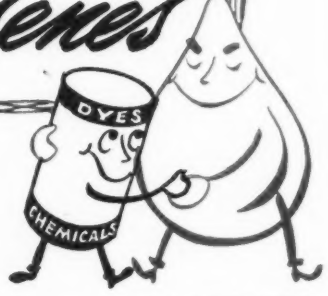
MFG. CO., NORRISTOWN, PA.

MANUFACTURERS OF: FULL FASHIONED HOSIERY MACHINES; CIRCULAR MACHINES FOR OUTERWEAR, UNDERWEAR, SPORTSWEAR, TRIMMINGS; STOP MOTIONS

For more information, write direct or use Reader Service post card.

the Synergistic Versenes®



WHAT "SYNERGISTIC" MEANS

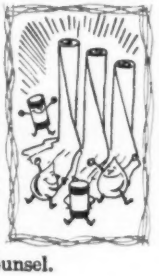
When one chemical cooperates with one or more other chemicals to make them all work better together than each could work separately, the action is called "synergistic". This explains why the synergistic Versenes are so valuable to textile processing. From cleaning and scouring processes right on through dyeing and finishing they furnish synergistic action that cuts costs, improves quality, enhances appearance.

THE PROFITABLE PARTNERSHIP

When one or more of the Versenes is properly added to your wet processing formulas it can insure cleaner fibers, softer hands, whiter bottoms and brighter colors. It can prevent or remove iron, lead and other metallic stains. It solubilizes "insolubles", increases color fastness, prevents shade changes, spotting, streaking and crocking — keeps dyeing on the level.

GUARANTEED QUALITY

The synergistic action of the powerful Versene Chelating Agents is your assurance of satisfaction. Made only under F. C. Bersworth patents and process, the Versenes are extremely stable at high temperatures throughout the pH range. Chelating power is guaranteed in sample or carload lots. Available as several formulas in liquid or powder form. Send for Technical Bulletin No. 2 and samples. On complicated problems ask for Chemical Counsel.



VERSENE WATER TEST KIT. Tells Total Hardness in 2 minutes. Accurate to 1 grain per gal. Versenate Method. Complete with instructions $5.00 Postpaid.

"Chemistry's most precise chemicals"

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Chas. S. Tanner Co., Liberty Life Bldg., Charlotte, N. C.
Kraft Chemical Co., Inc., 917 West 18th Street, Chicago 8, Illinois
Siegel Chemical Co., One Hanson Place, Brooklyn 17, New York
George Mann & Co., Inc., 251 Fox Point Boulevard, Providence, Rhode Island
Barada & Page, Inc., Houston, Dallas, Corpus Christi, New Orleans, St. Louis, Wichita, Oklahoma City, Tulsa, Kansas City, Mo.
Braun-Knecht-Heimann Co., San Francisco, California
Van Waters & Rogers, Inc., Seattle, Wash. & Portland, Ore.
Braun Corporation, Los Angeles, California

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NEWS ABOUT Suppliers

EQUIPMENT SUPPLIERS

American Machine & Metals, Inc., East Moline, Ill., has appointed R. M. Hammes assistant general sales manager of the Niagara Filters Div. and the Tolhurst Centrifugals Div.

American Supply Co., Central Falls, R. I., has appointed James J. Fine sales manager.

Arrow Needle Co., Manchester, N. H., a subsidiary of Textile Machine Works, has acquired the assets of the Stelton Needle Co., Stelton, N. J.

Atkinson, Haserick & Co., Boston, Mass., has transferred its gilling faller shop and card-clothing shop from Pawtucket, R. I., to its building at 1639 W. Morehead St., Charlotte, N. C.

Buensod-Stacey, Inc., New York, N. Y., has opened a new branch office at 601 Central National Bank Building, Richmond, Va. R. D. Melton is in charge of this new office.

Chapman Electric Neutralizer Co., Portland, Me., has announced the retirement of George H. Chapman, general manager; Merle S. Pennell, sales manager; Daniel H. Speidel, Midwestern representative; Charles F. Sullivan, New York representative. Distribution and service of all Chapman products will be handled by the Portland Co., Portland, Me.

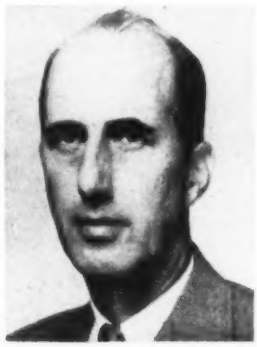
Container Corp. of America, Chicago, Ill., has purchased 33 acres of land in Santa Clara, Calif., for the expansion of production facilities in the San Francisco Bay area. An 85,000-sq.-ft. folding-carton plant will be constructed and will be in operation by late July. The company has appointed Donald H. Brewer and Leo H. Schoenhofen as senior vice presidents. John D. Spence has resigned as a vice president.

W. D. Dodenhoff Co. has appointed Carl Baker sales manager of the Industrial Supply Div. He will make his headquarters at the company's home office in Greenville, S. C.

Economy Pumps, Inc., a division of C. H. Wheeler Mfg. Co., Philadelphia, Pa., has organized the Wheeler-Economy Fire Pumps Dept. This new department is under the direction of J. U. Engelbrink.

Flexible Steel Lacing Co., Chicago, Ill., has appointed John Bakke representative in Michigan, Indiana, and western Kentucky. He succeeds George W. Gramer, retired.

Robert Gair Co., Inc., New



C. L. PETERSON (left) has been appointed vice president of Brown Instruments Div. of Minneapolis-Honeywell Regulator Co., Philadelphia, Pa. O. B. WILSON (right) has been appointed general sales manager.

NEW
SUPER-WHITE
NON-YELLOWING

OR

SUPER HARDNESS—
Resistant to Acids and Alkali

OR

SUPER SAFETY AROUND FOODS

ONLY
DAMP-TEX
GIVES YOU ALL 3*

The Damp-Tex System of painting offers the widest choice of special applications for special problems of any enamel brand Whether you want extreme hardness and resistance to mildew acids and alkali, a non-yellowing whiter white, a non-toxic surface without flavor-tainting odor . . . or 30-minute drying or whatever *your* particular problem requires, investigate Damp-Tex.

*Among wet surface enamel brands.

FOR SURVEY OF YOUR PLANT, MAIL COUPON BELOW

LIQUID, PORCELAIN-LIKE
DAMP-TEX FOR
WET
OR DRY SURFACES

CLIP TO YOUR LETTERHEAD **AND MAIL**

Please send representative to survey our plant and recommend the most advanced solutions without obligation.

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STEELCOTE MFG. CO.
GRATIOT & THEXTON ST. LOUIS 3, MO.

Canadian Industrial Distributor
G. H. WOOD & CO., LTD., TORONTO

work
moves *faster*
when you use . . .
Shamrocks

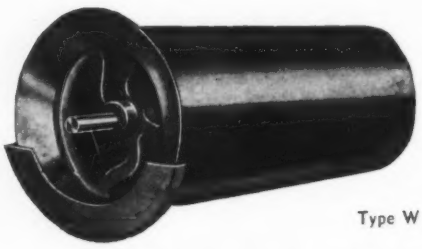
Let a Shamrock representative check your plant. His constant contacts with mill operations can prove helpful to your problems.

Your Shamrock representative is a trained *specialist* in the application of Shamrock Canvas Baskets and Trucks to varied plant operations. He can help in suggesting efficient work flow systems—using standard or made-to-order Shamrock styles to fit your particular plant needs. *Get his helpful advice!*

Shown above is the Shamrock No. 19 Truck, leather reinforced around top rim and at ends of strips; this Shamrock is being used for transporting yarn on cones. For complete information, write direct or contact nearest sales office listed below. MEESE, INC., Madison, Indiana.

SALES OFFICES: NEW YORK—F. R. Tyroler, 37 W. 43rd St., MU 2-1437; ATLANTA—W. E. Petway, 4403 Jefferson St., Chamblee, Ga., Phone 7-2430; FORT WORTH—V. M. Hooton, 4220 Normandy Road, Tel. Lockwood 6564; LOS ANGELES—Fred J. Petersen, 4645 East Olympic Blvd., ANgelus 0292; Export Manager—R. A. Auerbach, Easton, Pa. Cable Address: "Natly".

SHAMROCK
canvas baskets • hampers • trucks



Type W

Open End Cooling Cylinder For Setting Resin Finish

Cools cloth below room temperature. Eliminates cooling off period. Improves fabric finish. Easily applied to Calenders, Embossers, Tenter Frames.

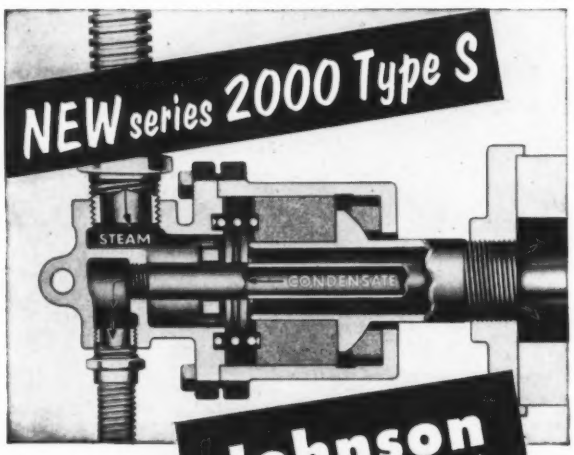
Small pipe feeds cold water to maintain 3" level on bottom of cylinder. Warm water drains over flared end of cylinder. No rotary joints.

Send for Sizes and Simple Installing Instructions.

J.E. CARROLL & CO.

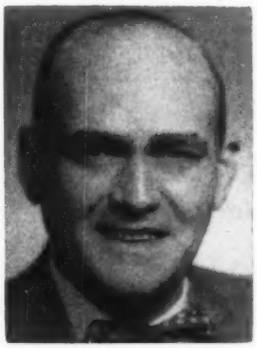
112 CAMBRIDGE STREET, LOWELL, MASS.

Can Dryers | Jacketed Cylinders | Mixing Kettles
Dye Tanks | Web Dye Padders | Lab. Equipment



THE JOHNSON CORP., 814 WOOD ST., THREE RIVERS, MICH.

News About SUPPLIERS (Continued)



PRENTICE BORDEN has been appointed vice president and works manager at Lewis-Shepard Co., Watertown, Mass.

L. G. JANETT has been elected a vice president of J. O. Ross Engineering Corp. and manager of its Chicago, Ill., office.

York, N. Y., has named Arthur J. Brewster manager of its Angelus Corrugated Box division, Los Angeles, Calif. Thomas Hanger has been named division manager of the Teterboro, N. J., corrugated division, succeeding Mr. Brewster.

Graton & Knight Co., Worcester, Mass., has named Tom Cook sales representative in the Texas-Oklahoma area.

Rodney Hunt Machine Co., Orange, Mass., has appointed Malcolm M. Coston manager of the Process Equipment Div.

Hyatt Bearings Div. of General Motors Corp., Harrison, N. J., has appointed Martin A. Moore manager of the company's plant at Clark Township, N. J., and Edward S. Clymer manager of the company's plant at Harrison, N. J. Leo V. Farrell has succeeded Mr. Clymer as general production manager and C. Russell Todd has succeeded Mr. Farrel as general purchasing agent.

Hyster Co., Portland, Ore., has named Jack Wright northwestern district manager; James N. Rector southeastern district manager; and Robert Hile general manager of the Hyster retail store in Chicago, Ill.

Manning, Maxwell & Moore of Canada Ltd., has started operations in Galt, Ont. New officers, directors, and operating personnel are Hamilton Merrill, president; Chester H. Butterfield and Colby M. Chester, III, vice presidents; Charles A. Moore, III, treasurer; John A. Flynn, controller; Clark I. Scott, secretary; Thomas F. Cummings, assistant secretary. Members of the board of directors include Messrs. Merrill, Butterfield, Chester, and Moore. Operating personnel include Franklin T. Sherwood, manager of manufacturing; Arthur J. Dubee, supervisor of valve manufacturing; and Tracy C. Dickson, supervisor of gauge assembly.

Meese, Inc., Madison, Ind., has appointed Fred J. Petersen direct sales representative covering the states of California, Nevada, Utah, and Arizona.

Mellor Bromley & Co. Ltd., Leicester, England, has named G. A. Hannah and A. Shortland to the board of directors. The Mellor Bromley Group has named W. A. Simpson, G. S. Helliwell, R. K. L. Walker, and L. Chadwick to the newly formed board of directors for Samuel Pegg & Son Ltd. Mr. Simpson is chairman and Mr. Helliwell is managing director.

Miller Motor Co., Melrose Park, Ill., has changed its name to **Miller Fluid Power Co.**

Morse Chain Co., Detroit, Mich., has expanded its sales organization by the creation of a new Midwest sales territory that includes the states of Wyoming, Utah, Colorado, Nebraska, Kansas, Missouri, and parts of Illinois, Kentucky, Tennessee, Mississippi, and Arkansas. C. B. Lane will head the new Midwestern sales office with headquarters in Overland Park, Kansas. R. J. Donachie has been named manager of the Morse Chain Philadelphia office.

SOLVAY gives you

to best fit your individual needs!

SOLVAY'S TECHNICAL SERVICE IS DIFFERENT—because it is established on an *industry-wide* basis—with *special sections* for *different industries!* As a result we can offer our customers unique services that are not ordinarily available.

FOR INDIVIDUAL INDUSTRIES—SOLVAY Technical Service has separate groups of engineers, chemists and technicians. Each member has had years of specialized training and practical experience in the industry in which he works. His extensive background and knowledge are at your service.

THESE SECTIONS INCLUDE: glass, paper, textiles, ceramics, steel and iron, water and industrial waste, food and beverage, concrete, highway construction and maintenance.

THESE TOP-NOTCH CONSULTANTS are available to work with you in the development of a new or improved process . . . suggest better methods of handling, storing and using SOLVAY products.

THESE SOLVAY SERVICES include: field service . . . laboratory service (with the best alkali research facilities in the world) . . . and authoritative technical bulletins.

. . . So today, why not avail yourself of the SOLVAY Technical Service section for your industry? Write or 'phone your nearest SOLVAY office for further information.

SOLVAY PROCESS DIVISION
Allied Chemical & Dye Corporation
61 Broadway, New York 6, N. Y.

BRANCH SALES OFFICES:

Boston • Charlotte • Chicago • Cincinnati • Cleveland
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SOLVAY

Soda Ash • Caustic Soda • Potassium Carbonate • Calcium Chloride • Cleaning Compounds • Caustic Potash • Sodium Nitrite
Chlorine • Ammonium Bicarbonate • Sodium Bicarbonate • Ammonium Chloride • Snowflake® Crystals • Monochlorobenzene
Para-dichlorobenzene • Ortho-dichlorobenzene

M·B "AMOSKEAG" PNEUMATIC ROLL PICKER

MODEL A-VT-A
20,000 R.P.M.

This is NOT a grinder, but the original pneumatic tool especially designed for the SPECIFIC Purpose of

REMOVING LINT and FLY

from the top rolls and other parts of the drafting elements on

SPINNING FRAMES also ROVING FRAMES

Spindle design permits using PICK (which gathers the fly and lint). 3/16" diameter by 5" long when used on Spinning Frames and 3/16" diameter by 7" long when used on Roving Frames. Exhaust air directed back of roll picker to prevent fly and lint from being blown into yarn when spinning by air deflector. Special grease-sealed bearings. No lubrication required. Weight only 14 oz.

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Virginia and South Carolina
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CHARLOTTE SUPPLY CO.....Charlotte 1, No. Car.
North Carolina Representative
GEO. M. HAND, c/o Matthews Equipment Co., 509 No. 25th St., Reading, Pa., N. Y., Pa., Maryland and New Jersey Representative
R. D. HUGHES SALES CO.....1812 Main St., Dallas 1, Texas
Texas, Oklahoma and Arkansas
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TEXTILE MILL CRAYONS

IMPORTANT MEMBERS OF YOUR PRODUCTION TEAM . . .

Made by experts . . . after years of careful research . . . EMPIRE TEXTILE MILL CRAYONS meet the industry's most exacting requirements for textile marking and identification.

Every year, millions of these top-quality marking crayons join the production teams of textile mills across the nation.

Marking counts in efficient production. Count on EMPIRE TEXTILE MILL CRAYONS . . . First choice of textile experts everywhere! Free marking guide gladly sent. Dept. T-8

JUNIOR EMPIRE

EMPIRE TEXTILE MILL CRAYON

The American Crayon Company
Sandusky, Ohio New York

News About SUPPLIERS (Continued)

ROBERT A. BEHRMANN has been appointed director of purchases at Emery Industries, Inc., Cincinnati, Ohio.

KENNETH H. ALLEN has been appointed director of purchases for Stauffer Chemical Co., New York, N. Y.

Reliance Electric & Engineering Co., Cleveland, Ohio, is constructing a 90,000-sq.-ft. addition at its Ashtabula Div. The new plant will be used to produce the company's new line of a.c. motors. Fred E. Harrell, vice president, has been given the additional duties of director of special projects, a newly created position. Hugh D. Luke has been named manager of manufacturing of rotating equipment, and Stephen W. Feiss has been appointed general superintendent of the company's Ivanhoe Div.

Robertshaw-Fulton Controls Co. has appointed Herbert Boshea purchasing agent for the Bridgeport Thermostat Div., Bridgeport, Conn.

Standard Pressed Steel Co., Jenkintown, Pa., has named Francis J. Kinsella manager of outside sales.

The Stanley Works, Steel Strapping Div., New Britain, Conn., has appointed J. A. Dickson district manager of the Southeastern states.

G. H. Tennant Co., Minneapolis, Minn., has appointed John H. Kelley New England manager. Mr. Kelley will be located at the company office in Cambridge, Mass.

Victor Ring Traveler Co., Providence, R. I., has moved its Southern office and stockroom to a newly constructed building at 914-16 E. Franklin Ave., Gastonia, N. C. Miss Leona Brabham is in charge of the new supply center.

Warner & Swasey Co., Cleveland, Ohio, has purchased Industrial Scientific Co., New York, N. Y. The Warner & Swasey Research Corp. has been formed to carry on the work of the former company. The activities of this new group will be expanded into the fields of textile machinery and machine tools.

Worthington Corp., Harrison, N. J., is now operating its new hydraulic test laboratories at the Harrison Works. The laboratory covers over 20,000 sq. ft. The company has appointed B. R. McBath general European manager. Mr. McBath will be located at the French-Worthington Co. Paris, France, offices.

CHEMICAL AND YARN SUPPLIERS

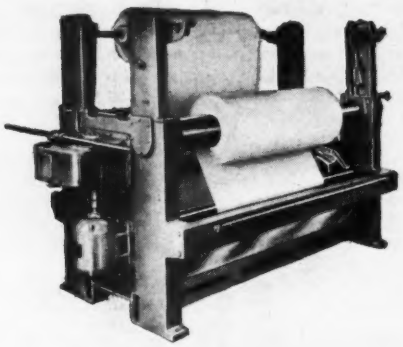
Alaska Pine & Cellulose Ltd., Vancouver, B. C., is constructing a new three-story research building. Pilot plants for making and testing yarns produced from wood cellulose by both the viscose and acetate processes will be included in the building.

American Cyanamid Co., Industrial Chemicals Div., New York, N. Y., has appointed Frank W. Miner, Jr., assistant to the department manager of the Manufacturers Chemicals Dept. Benedict F. Melucci was named technical director of this department. Kenneth

Blueprint for Profit

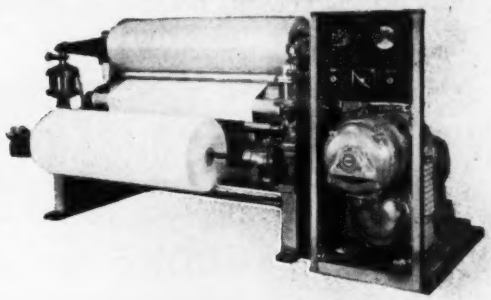
The competitive market of today calls for careful planning by management to assure profits on each operation, through better production with sustained quality of processed fabrics. Processing equipment which delivers greater production without sacrificing quality is a must.

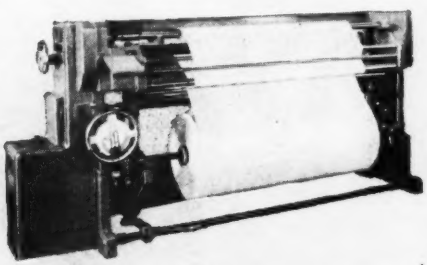
For over 53 years of building for the wet processing industry Van Vlaanderen has set the standard with equipment ruggedly built and designed to give sustained trouble-free operation with high quality work. Consult us for a single machine or an entire plant.



PROFIT-MAKING JIG—The V.V. 888 (left) is now the standard for sustained production, quality performance and trouble-free service in many dye plants. It features silent worm-type drive, operating in oil; drag-free multiple dry-disk friction clutches; clean, enclosed roller chains. Widely spaced roll centers permit large batches. Other quality features: massive, vibration-free frames of cast iron; stainless steel tank with side overflow; oscillating expander; stainless steel batch rolls, mounted on anti-friction bearings and malleable iron brakes.

PROFIT-MAKING PADDER—The V.V. Heavy Duty Padder (right) is for modern resin impregnating, finishing and dyeing. Correct design and rugged construction insure quality work and long life. FEATURES: slip clutch take-up, with friction-plate clutches; variable speed drive; malleable iron brakes; pneumatic pressure controls each cylinder separately; stainless steel guide rolls; easily removed padder rolls on anti-friction bearings.





PROFIT-MAKING TUBER—The V.V. Tuber (left) handles most fabrics, including those that benefit from tensionless processing. FEATURES: uniform package density as set by operator; constant cloth speed to 200 Y.P.M.; accurate measurement through driven measuring drum with minimum tension between let-off and drum; a better package with even selvages; easy loading and operation; non-slip, long wearing 1 yd. measuring roll; easily operated selvage control.

It has been a fifty year policy of Van Vlaanderen to put the most value possible into every machine. Men long in the Dyeing and Finishing Industry accept Van Vlaanderen Equipment as standard because they know from experience that they get high quality work with top production and long service when Van Vlaanderen Machines are used.

VAN VLAANDEREN MACHINE COMPANY

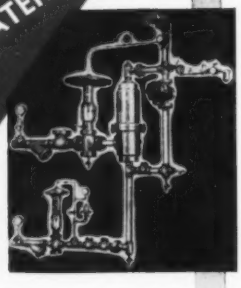
MACHINE COMPANY

370 Straight Street, • Paterson 3, New Jersey

In the South — Parrott and Ballentine • 610 South Carolina National Bank Building • Greenville, South Carolina

WORLD'S LARGEST MANUFACTURER OF MACHINES FOR PROCESSING MODERN FABRICS

Insist on
Pick
INSTANTANEOUS
HOT WATER HEATERS



SAVES MONEY IN ALL TEXTILE WET PROCESSING

IN DAILY USE at . . .

Bates Mfg. Co.
Exeter Mfg. Co.
Pepperell Mfg. Co.
Fieldcrest Mills
Dan River Mills
Pendelton Woolen Mills
and many others.

Write for booklet on how Pick Heaters cut costs of hot water. No Obligation. Write Dept. TW254

PICK GIVES YOU MAXIMUM EFFICIENCY

★ *Water Is Heated INSTANTLY* by steam injection. Fuel savings are substantial because there is no waste — water is heated only as used.
★ *Pick Heaters Maintain Continuous Flow* at preset temperature for bleaching, dyeing, scouring, etc.
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★ *No Storage Tanks Required.* Pick Heaters are compact — can be installed in corners, on walls or overhead. Saves valuable floor space.
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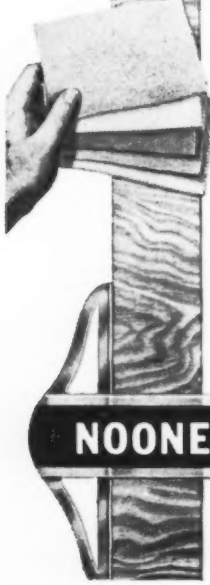

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Cotton warp or linen warp
All standard widths and weights

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OTHER SPECIALTY WOVEN FABRICS
Developed at your request

NOONE INDUSTRIAL FABRIC DIV. KENWOOD MILLS

Peterborough, New Hampshire

The oldest manufacturer of woven industrial fabrics in America

News About **SUPPLIERS** (Continued)

ROBERT J. KEATING has been named to head the newly formed Industrial Waste Dept. at Graver Water Conditioning Co., New York, N. Y.

DR. HERMAN SOKOL has been elected vice president in charge of research and development at Heyden Chemical Corp., New York, N. Y.

K. Danton has been appointed manager of the Azusa, Calif., plant of the company. He succeeds Dr. W. W. Oldham, who has been assigned to the newly created post of technical director of the Cyanamid plant at Wallingford, Conn.

American Enka Corp. will expand operations at its semi-commercial nylon plant at Enka, N. C. The company plans to spend $1,600,000 for additional equipment. A. J. Engel of Arnhem, Holland, has been elected a director of American Enka Corp.

American Viscose Corp., Philadelphia, Pa., has named Dr. Michael Golben group leader of the pulp-evaluation project in the chemical research department at Marcus Hook, Pa. Robert M. Yahres succeeds Dr. Gilben as superintendent of the Lewiston, Pa., rayon plant. Faust L. Bellegia has been named chief plant engineer of the Parkersburg, W. Va., plant to succeed George Downing, retired.

Arnold, Hoffman & Co., Inc., Providence, R. I., is enlarging the sales-service laboratories located in Providence, by the addition of a new pigment laboratory and expansion of the Analytical & Development Section.

Atlas Powder Co., Wilmington, Del., has named Edward M. Simon, Jr., to the textile-chemicals research staff at the Central Research Laboratory, Atlas Point, Del.

Bolen Research Associates, Augusta, Ga., has been organized by V. Paul Bolen. The new company specializes in the chemical finishing of cellulose fibers, yarns, and fabrics.

Carbic Color & Chemical Co., Inc., New York, N. Y., has appointed Arnold G. Tew to its sales staff. He will cover accounts in southern and western New England.

Carbide & Carbon Chemicals Co., Div. of Union Carbide & Carbon Corp., New York, N. Y., has appointed Henry B. McClure president. Dr. J. G. Davidson has been named chairman of Carbide & Carbon and a member of the appropriations committee of Union Carbide. Fred H. Nystrom has been appointed technical sales representative for the Textile Fibers Dept. of Carbide & Carbon. Richard H. Brissett has been transferred to the New York office to assist in the development of new uses for Dynel fiber.

Chemstrand Corp., Decatur, Ala., has named the following to its sales staff: W. Curtis Melton, Jr., New York, N. Y.; Gordon R. Tait, Ardmore, Pa.; Harry Cramer, Mitchell F. Simmons, and Julius J. Chamberlain, Charlotte, N. C.; R. Houston Hale, Dedham, Mass.

Ciba Co., Inc., New York, N. Y., has appointed William F. Okey to the Charlotte, N. C., sales staff.

Diamond Alkali Co., Cleveland, Ohio, has promoted C. A. Butler, Jr., to the newly

News About **SUPPLIERS** (Continued)

JOHN H. BAHLBURG has been named manager of new products, organic chemicals department, of Wyandotte Chemicals Corp., Michigan Alkali Div., Wyandotte, Mich.

DR. HAROLD R. McCLEARY has been named manager of pigments research at the Bound Brook Laboratories of the Research Div. of American Cyanamid Co., Bound Brook, N. J.

created position of director of commercial development. Loren Scoville has been named to take over Mr. Butler's work as director of engineering.

Dow Corning Corp., Midland, Mich., has appointed Norton C. Foster manager of textile-industry sales and Gordon E. McIntyre as manager of the Dow Corning office in Washington, D. C.

E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., has moved its Haskell Laboratory for Toxicology and Industrial Medicine into a new $2,000,000 building near Newark, Del.

General Electric Co., Schenectady, N. Y., has appointed Dr. Edward A. Kern as manager of engineering for the company's Silicone Products Dept., Waterford, N. Y. Vernon R. Childress has been appointed manager of marketing research and product planning for the Chemical Materials Dept. Frederic W. Hammesfahr has been named manager of the chemical-process development section of the Engineering Dept.

Hooker Electrochemical Co., Niagara Falls, N. Y., has started operation in its new $12,000,000 caustic soda-chlorine plant at Montague, Mich.

New York & New Jersey Lubricant Co., New York, N. Y., has appointed E. J. Wood to the New England sales staff. Mr. Wood will cover territory including Maine, New Hampshire, and northern Vermont.

Spaulding Fiber Co., Inc., Tonawanda, N. Y., has opened a branch office in Baltimore, Md. D. F. Danson is in charge of this office.

Wyandotte Chemicals Corp., Michigan Alkali Div., Wyandotte, Mich., has appointed F. M. Zorn assistant to the sales manager, general products group, inorganic chemicals, and L. M. W. Behm, manager of order and scheduling. Scott Starkey has been appointed Southwestern sales representative.

OTHER SERVICES

American Leather Belting Association has changed its name to National Industrial Leather Association. Under the reorganization, the membership of the association will be classified under three divisions: Leather Belting, Mechanical Leather Packing, and Textile Leather.

James W. Cox, textile engineer, New York, N. Y., has appointed Douglas G. Woolf, of Altadena, Calif., former editor-in-chief of TEXTILE WORLD, as his representative for the Pacific Coast.

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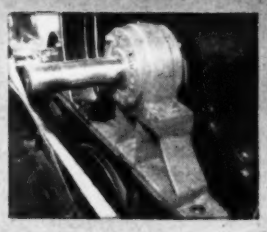

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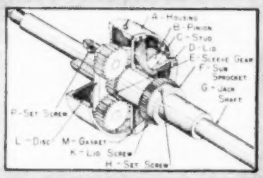

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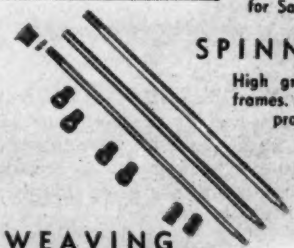
Hundreds have SAVED with the PRECISION Compound — the original, for Roving Frames. We need not enumerate the many advantages, here. Just ask any mill man. Call PRECISION, the Pioneer, for Sales or Parts.



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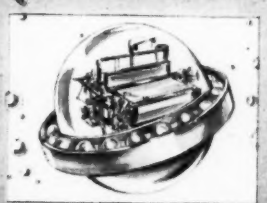

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wastemeter **WM**

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BM is a measurement of overhead that provides an effective means for controlling actual expenditures. Gains or losses of "fixed overhead" resulting from other than normal activity are segregated from under or over expenditure variances. The charges for "variable overhead" are compared with budgeted amounts adjusted to actual operations.

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NEWS ABOUT Mills

COTTON MILLS

Coats & Clark, Inc., has completed the construction of its new $5,000,000 plant at Toccoa, Ga. New equipment has been installed. Daniel Construction Co., Greenville, S. C., was the general contractor and J. E. Sirrine Co., Greenville, was the project engineer.

Dalton Textile Corp., North Dalton, Ga., has been purchased by John McLellan, its president and treasurer.

Dixiana Mills, Inc., Laurinsburg, N. C., is constructing a new plant at Dillon, S. C. The new plant will be one story and contain about 75,000 sq. ft. of floor space. Air conditioning will be installed. About 150 persons will be employed.

Goodyear Clearwater Mills, Rockmart, Ga., is building a new fabric-processing unit at a cost of more than $1,500,000. Operations are expected to begin about June 1.

Greenwood Mills, Greenwood, S. C., is constructing a 40,000,000-gal. reservoir above its Ninety-Six, S. C., pump station. The new Durst Plant, Greenwood, S. C., is now running at 50% of its ultimate capacity and is expected to begin full production by early summer. Some machinery is still being installed.

Joanna Western Mills Co., Chicago, Ill., plans to construct a new addition to its mill. The cost will be close to $1,000,000.

Lane Cotton Mills, New Orleans, La., has completed a $2,000,000 modernization program that included the installation of new machinery, replacement of floors, installation of humidity and lighting equipment, new fire prevention, safety, and employee facilities. Annual production has been increased to 50,000,000 yds. About 1,400 persons are employed on three shifts.

Linen Thread Co., Inc., New York, N. Y., has acquired R. J. Ederer Co.

Park Yarn Mills Co., Kings Mountain, N. C., has let the general contract to C. T. Bennett Construction Co., Kings Mountain, for a one-story addition to its mill, to be used as a warehouse. Beemer Harrall, Hickory, N. C., is the architect.

F. W. Poe Mfg. Co., Greenville, S. C., has asked bids on a weave shed and annex of 125,000 sq. ft.

Rosemary Mfg. Co., Roanoke Rapids, N. C., will complete by the end of 1954 the $3,500,000 modernization and expansion program started in 1952. The 1,142 old-type jacquard looms are being replaced with 700 new high-speed Draper looms and Crompton & Knowles double-lift, double-cylinder jacquard looms. A combed-yarn department will be installed, and screen printing facilities will be added.

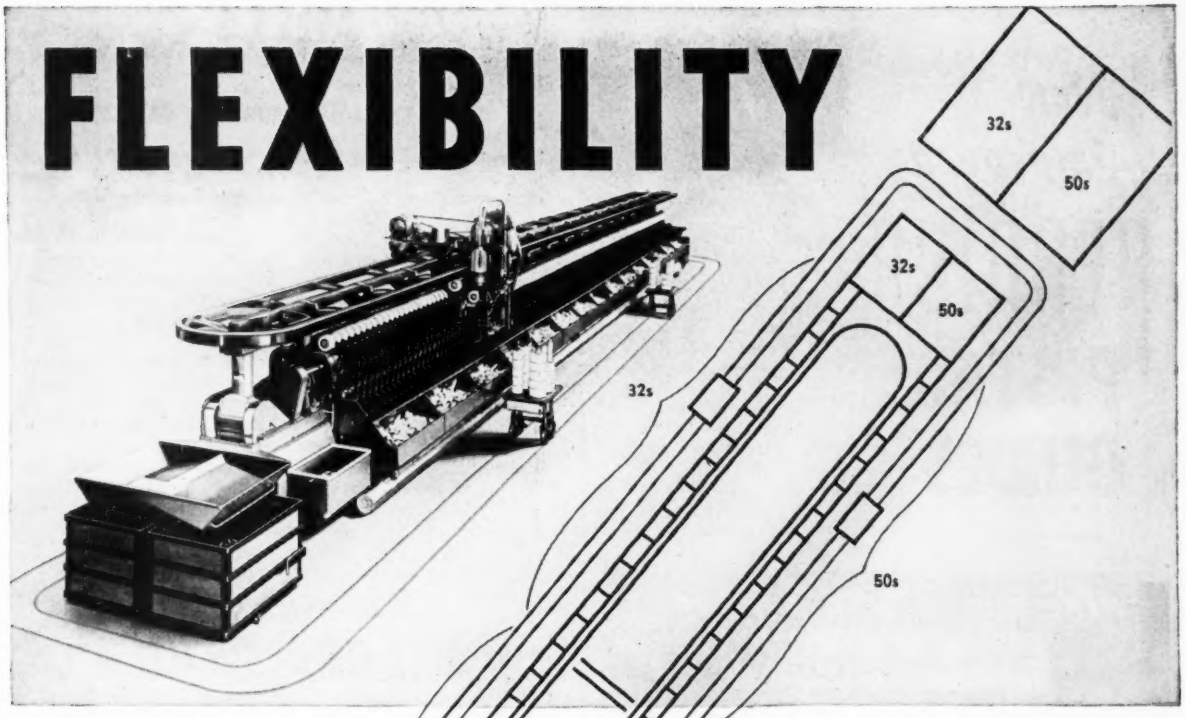
Southeastern Cottons, Inc., New York, N. Y., has changed its name to Avondale Mills, Inc.

Trenton Cotton Co. Ltd., Trenton, Ont., has purchased property in Stirling, Ont., and will erect a branch mill on it. The new plant will cost approximately $350,000, including equipment. C. A. Baker is the manager.

West Point Mfg. Co., Shawmut, Ala., has asked bids for a new one-story addition to its mill cafeteria. R. Kennon Perry, Atlanta, Ga., is the architect.

West Textile Mills, West, Texas, has acquired a new building for expansion purposes.

FLEXIBILITY



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★ Sorter tables are at *both ends* of the machine, with only one count in each half.

★ Trident tables are at *both ends* of the machine, divided so counts are separate.

★ There are separate operator trucks for each count, one truck for each "quarter" of the machine.

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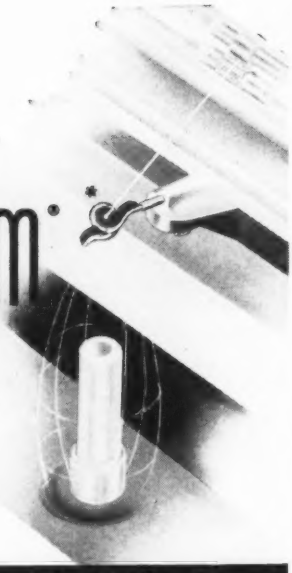

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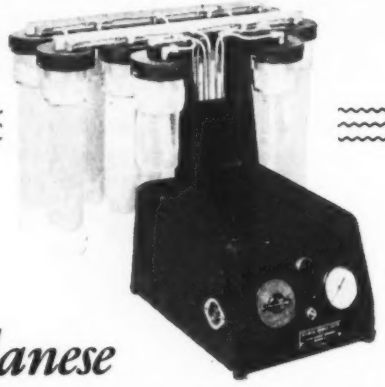

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The Celanese Wrinkle Tester was developed at the Summit Research Laboratories of the Celanese Corporation of America and designed and manufactured under agreement by Custom Scientific Instruments. The Wrinkle Tester is a helpful tool in evaluating the resilience and wrinkle behavior of fabrics under conditions very similar to those occurring in actual use. This instrument takes into account that in actual wear, fabrics, due to their inherently different wrinkle resistance, display wide differences in the pattern and degree of wrinkling. The Wrinkle Ttester simulates the widely accepted clenched fist test by performing a repetitive cyclic wrinkling action under precisely controlled conditions.

The apparatus consists essentially of an air system which alternately pumps the air out of a group of specimen tubes into another set of specimen containers. The air system is composed of an air pump, humidifier to saturate the air with moisture in case it is desired to run the testing with high humidity.

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News About MILLS (Continued)

WOOLEN AND WORSTED MILLS

American & Efird Mills, Inc., Mount Holly, N. C., is now producing men's and women's wear worsteds, as well as blended fabrics. New Crompton & Knowles W3 looms and necessary preparatory equipment have been installed.

Appleton Woolen Mills, Appleton, Wis., will consolidate its branch now at Reesburg, Wis., with its main operation in Appleton.

Lockport Felt Co., Newfane, N. Y., has started construction of a $600,000 plant at Starkville, Miss.

Marriner & Co., Boston, Mass., has moved its Boston office to Lawrence, Mass.

Alexander Smith, Inc., Yonkers, N. Y., has completed a $500,000 realignment and streamlining program at its velvet-carpet mill.

E. F. Walter Ltd., Montreal, Que., is building a modern warehouse and offices on Labarre St. Cost is $60,000.

Wyandotte Worsted Co., Waterville, Mass., has purchased Blackinton Mills, Inc., Conestree, S. C.

SYNTHETICS MILLS

Textron, Inc., Providence, R. I., is establishing a wholly owned subsidiary in Massachusetts to take over its mill properties in Lowell to be known as Lowell Corp.

KNITTING MILLS

Ackerman Knit Goods Reg'd., Montreal, Que., is constructing a 95x94-ft., one-story mill building. The cost is $50,000. E. Ackerman is president.

Alden Mills, New Orleans, La., plans to expand its plants in both Louisiana and Mississippi.

Burlington Mills, Inc., Greensboro, N. C., will build a $1,250,000 mill at Scottsboro, Ala., to manufacture nylon stockings. Completion is expected by September. About 300 persons will be employed. T. B. Sain, of Harriman, Tenn., will be superintendent of the new plant. The first building will contain 32,000 sq. ft. of floor space, with two other similar units planned.

Butterfly Hosiery Co. Ltd., Drummondville, Que., has ordered a 75-gauge, 32-section, high-speed automatic full-fashioned knitting machine from Karl Lieberknecht.

Cadillac Hosiery Co., Inc., has moved to new and larger quarters at East River and Randolph St., Detroit, Mich.

A. M. Ellis Co., Philadelphia, Pa., has purchased a one-story building at 23rd and Carpenter St. for knitting operations. The building contains over 40,000 sq. ft. of floor space.

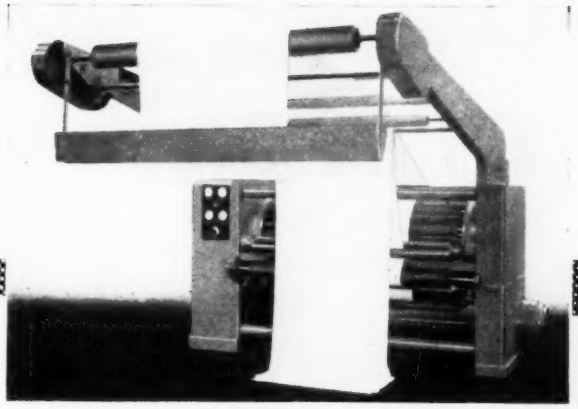
Golden Fleece Knitwear Co., Philadelphia, Pa., has leased 8,000 sq. ft. on the second floor of a building at D and Ontario Sts. Women's full-fashioned sweaters will be produced.

Gomzi Knitting Mills, Brooklyn, N. Y., has been formed by Harry Gunberg, who has withdrawn from Berg & Berg Knitting Mills, Brooklyn, to form his own company. David Zitofsky will be associated with him. The company has leased 22,000 sq. ft. of loft space at 250 McKibben St., Brooklyn. Equipment will be installed for the manufacture of women's knitted suits and sweaters.

Ladd Knitting Mills, Inc., Sinking Spring, Pa., will spend nearly $500,000 to equip two of its mills with full-fashioned-sweater knitting equipment. Sweaters knitted at Sinking Springs will be dyed and finished at the company's Beaudye plant in Reading. Investment in new equipment at the Talbot division will be approximately $400,000. Installations at Beaudye will cost

Know what you're doing when you nap with the

NEW GESSNER NAPPER



Gessner's new Hi-Torc Napper gives you maximum napping effect on any fabric without usual waste or flocking out, a new development in the napping field.

Four unique features of this new Gessner Napper include precise napper-roll torque control, self-correcting speed controls, higher positive cloth inspeed, and infinitely variable cloth tension control. Application of high maximum napping energy gives you as much as four times the production.

Extreme accuracy of the controls and a simple, positive means of making settings, which are automatically maintained, assure greater efficiency. In addition, a wider range of napping effects is possible because this new drive controls not only the speed but also the power exerted on the worker rolls. Cloth tensions are controlled by the automatic slack take-up of the torque-activated, takeaway feed roll. Ask for complete details.

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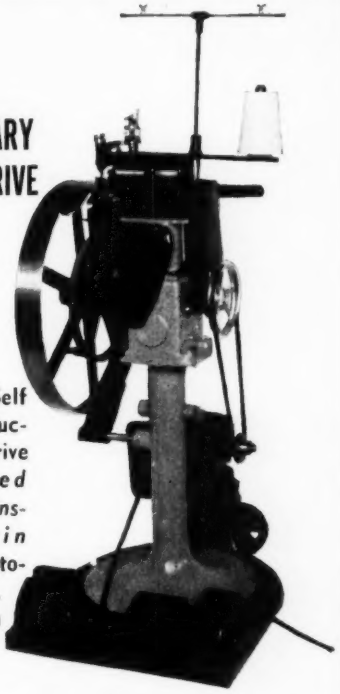

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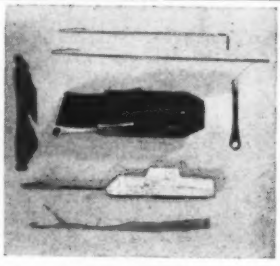

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News About **MILLS** (Continued)

$100,000. A 7,000-sq.-ft. addition will be constructed at Beaudye, and new dyeing equipment will be installed. The Talbot division purchased the bulk of machinery and equipment of Lee I. Robinson, Inc., Philadelphia, for a reported price of $200,000.

Laurel Knitting Co., Inc., has moved to new and larger quarters at 453 DeKalb Ave., Brooklyn, N. Y.

Myrtle Knitting Mills, Unionville, Conn., has been organized with Milton S. Sorokin as president and Ethel S. Sorokin as secretary and treasurer. Directors include these officers and Mary H. Brown, all of Hartford.

Norris Hosiery Mill, Murfreesboro, Tenn., is expanding its plant and installing more than $100,000 worth of knitting machines. The company has leased an additional building that is being remodeled, and 65 additional workers will be employed.

E. E. Paquette & Sons Ltd., Woodstock, Ont., has moved its branch hosiery mill from Plattsville, Ont., to Tavistock, Ont.

Peerless Hosiery Mill, North Wilkesboro, N. C., recently completed an addition that has increased the floor space by 50%.

Penn-Maid Hosiery Co., Inc., Reading, Pa., will construct a one-story addition, 104x60 ft., to its mill. The estimated cost is $14,976.

Ragan Knitting Co., Thomasville, N. C., has purchased 28 HH-PW circular hosiery machines and 26 Banner wrap machines for making men's hosiery.

Ripon Knitting Works, Ripon, Wis., has purchased all the outstanding capital stock of Frank Russell Glove Co., Berlin, Wis., which will continue under its own name as a wholly owned subsidiary. Edwin W. Schenck, vice president and treasurer of Ripon, is the newly elected president of Frank Russell.

Silver Knit Hosiery Mills, Inc., High Point, N. C., is adding 14,000 sq. ft. of floor space to its mill.

Super Knitting Mills Ltd., St. Hyacinthe, Que., has awarded a $100,000 contract to Carignan Bros., St. Hyacinthe, for the reconstruction of its mill at LaProvidence, Que.

Supersilk Hosiery Mills Ltd., London, Ont., is having Victor J. Blackwell & Associates, 310 Princess Ave., London, Ont., architects, prepare plans for an addition to its plant at 1151 Florence St.

Travis Mills Corp., Lititz, Pa., has completed the construction of a new nylon tricot plant containing 13,000 sq. ft.

Weldrest Hosiery Ltd., Mount Dennis, Ont., has ordered a Karl Lieberknecht 32-section, 75-gauge full-fashioned knitting machine.

Woodside Mills, Anderson, S. C., has purchased Featherknit Products Co., Inc., Greenville, S. C., and is transferring the Featherknit operations to the Haynsworth Mills in Anderson.

DYEING AND FINISHING PLANTS

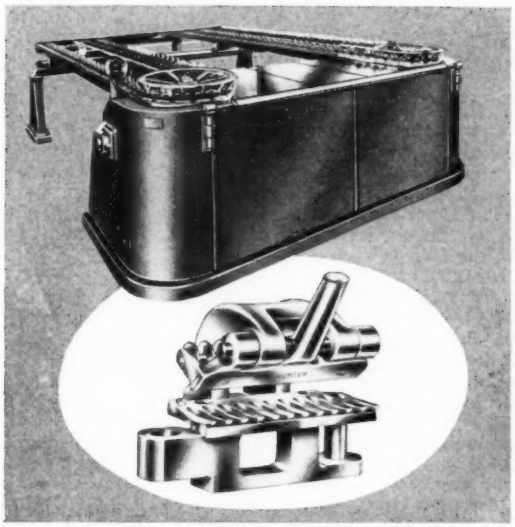
Bruck Mills Ltd., Cowansville, Que., has installed new embossing machinery and equipment. A Permutit-system water-softening unit has also been installed.

Hawthorne Finishing Co., New Haven, Mo., plans to lease a $230,000 160x400-ft. mill addition financed by local citizens. An estimated $475,000 will be spent on machinery and equipment.

Plymouth Piece Dye Works, Paterson, N. J., is adding 20,000 sq. ft. of floor space to expand its warehouse facilities.

U. S. Finishing Co., Norwich, Conn., has approved a $2,500,000 expansion and modernization program.

NOW! GET COST-SAVING FACTS on this new M&W equipment



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and Calendering
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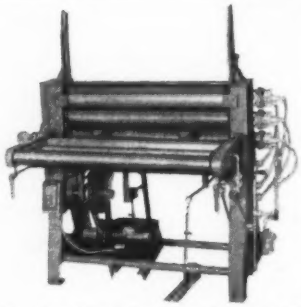
FABRICS



This fast, efficient 3-roll calender has heated rolls, with patented rotary joints and flexible metal hose, eliminating packing. A stream of live steam comes in contact with cloth only as it passes over the spreader. A foot pedal to lift rolls apart frees hands to start cloth.

The vari-speed motor is easily and quickly adjusted to any speed. Comes complete. Standard machines made in 36", 42", 48", and 54" width rolls. To special order 60", 66", and 72". For full details on this money and labor saving machine, write today.

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NEWS ABOUT Men

Frank E. Arnold has been named overseer of weaving at A. D. Ellis Mills, Inc., Mill No. 1, Monson, Mass.

Fred P. Bass has been named assistant overseer of the card room in the Hillside Plant of Callaway Mills Co., LaGrange, Ga.

Henry Bernstein has been named design technician for Robbins Mills, Inc., at its plant in Raeford, N. C.

Armando Brandao has joined Wamesit Wool Processing Co., Wamesit, Mass. He will head a new department for carpet manufacturers and will also be superintendent in charge of blending.

Ernest Bratt has resigned as general superintendent of the Champlain Mills of American Woolen Co., Winooski, Vt., and is now superintendent at the Barrymore Cloth Plant, Toronto, Ont.

Leland Burns has been appointed assistant superintendent of weaving and Melvin H. Smith has been appointed assistant superintendent of carding, spinning, and preparation at the Republic Cotton Mills of J. P. Stevens & Co., Great Falls, S. C.

George F. Buskirk has resigned as superintendent of knitting at the tricot division of Textron, Inc., East Greenwich, R. I. Mr. Buskirk has acquired exclusive rights to manufacture and sell the Textron let-off, an automatic yarn-feeding device used with tricot knitting machines.

J. C. Cavin has been named assistant superintendent of dyeing and finishing at Riegel Textile Corp., Trion, Ga.

P. T. Clark has resigned as card room foreman at Virginia Woolen Co., Winchester, W. Va.

Emile Collette has resigned as president of Associated Textiles of Canada Ltd., Montreal, Que.

HENRY E. RAUCH has been elected executive vice president of Burlington Mills Corp., New York, N. Y.

M. E. Crompton has resigned as a second hand at Jos. Bancroft & Sons Co., Reading, Pa.

Ray Dixon, formerly superintendent of the Raleigh, N. C., plant of American Woolen Co., has joined Burlington Mills Corp., Greensboro, N. C. **Harold J. Wilson,** resident manager, has succeeded him at Raleigh.

Joseph Duckett has been appointed manager of production scheduling for the manufacturing division of American Woolen Co., Lawrence, Mass.

Ernest Eckert has been named resident manager of Collins & Aikman Corp., Plant J, Bristol, R. I.

Rex Fairchild has been transferred from the American Thread Co. Willimantic Mills, Willimantic, Conn., to the Sevier, N. C., plant of the same company.

James Fallows has been named plant superintendent at Halifax Corduroys Ltd., Lachine, Que. Mr. Fallows was formerly with Verney-Corduroys Ltd., St. Hyacinthe, Que.

Roger E. Gay has been

News About **MEN** (Continued)

elected president of H. O. W. Knitting Co., New Britain, Conn. Other officers elected were: Edmund H. Taylor, vice president; Willard C. Oquist, vice president; Harry C. Olmstead, treasurer; Frederick W. Beach, secretary.

Ernest C. Geier has been elected a member of the board of directors of Sidney Blumenthal & Co., Inc., New York, N. Y.

E. Alan Gordon has been elected a director of Celtic Knitting Co., Montreal, Que., succeeding **W. F. Gaw**, retired.

L. W. Gregg has been named overseer of carding at American Thread Co., Newman, Ga. **George L. Hodges, Jr.**, has been named superintendent.

Craig Hancock has been named superintendent of Adams-Millis Corp., throwing plant, Tryon, N. C., succeeding **G. M. Ferree**, retired.

William J. Heller has been named overseer of weaving, and **George Ripley** has been named overseer of spinning at Crown Woolen Mills Corp., Marcellus, N. Y.

Thomas W. Hillyard, vice president and general manager of Munsingwear, Inc., Minneapolis, Minn., has been named vice president in charge of the company's hosiery divisions.

Stedman Howard has been appointed purchasing agent of Ware Knitters, Inc., Ware, Mass. He succeeds **Fred Clark**, retired.

F. T. Hurt has been appointed superintendent of the new Durst plant of Greenwood Mills, Greenwood, S. C. **C. J. Bryant** has been promoted to overseer of carding.

J. Rollins Jolly has been named president of Kingston Mill, Cartersville, Ga. He succeeds **J. H. Daughdrill**, who is now with E. T. Barwick Mills in an executive capacity.

James H. Kennedy has been named managing editor of TEXTILE WORLD, and **Richard B. Pressley** has been made associate editor. **Louise E. Wilie** has been named assistant managing editor.

D. F. Kent has been elected president of Kendall & Co. (Canada) Ltd., Toronto, Ont., and its operating divisions, Bauer & Black, Kendall Mills, and Polyken Industrial Tape. He will continue as general manager in addition to his new duties.

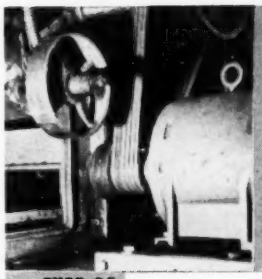
H. C. Knight has been named superintendent of Interlaken Mills, Fiskeville, R. I., succeeding **E. Bingham.**

Horace B. Learned has been elected vice president in charge of product development at Cheney Bros., Manchester, Conn.

Richard Laver has been named manager of the newly formed timestudy and production-scheduling department at Brinton-Peterborough Carpet Co. Ltd., Peterborough, Ont. **Clarence Corbett** is now personnel manager; **Walter Cass**, secretary-treasurer.

K. G. Loughlin, vice presi-

POMEROY DAY (left) has been elected to the board of directors of Cheney Bros., S. Manchester, Conn. He succeeds the late Frank D. Griffin. HORACE B. LEARNED (right) has been elected vice president in charge of product development.



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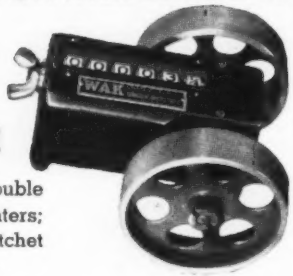

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News About MEN

(Continued)

RICHARD B. HOLLAND has been appointed assistant manager of the Children's Div. of William Carter Co., Needham Heights, Mass.

ANDREW PELKO, JR., has been appointed secretary and director of Coats & Clark's Sales Corp., formerly the Spool Cotton Co., New York, N. Y.

dent and general manager of the textile division of Celanese Corp. of America, New York, N. Y., has been elected a director.

Hubert McRee has been named superintendent of the newly established Overbrook Hosiery Co., Maiden, N. C.

William S. Moore has been named superintendent of Hartwell Mills, Plant No. 2, Toccoa, Ga.

Howard Morrison has been named assistant plant engineer at Sayles Finishing Plants, Inc., Saylesville, R. I.

J. S. Moyran has been named manager of the Magog Div. of Dominion Textile Co. Ltd., Magog, Que., succeeding **H. A. LeDuc**, resigned. **W. A. Tornquist** has been named superintendent of the print works in Magog, succeeding Mr. Moynan.

Raymond B. Olsen has been elected vice president of Medical Fabrics Co., Paterson, N. J.

Kerwin Purnell has been named superintendent at Dorr Woolen Co., Guild, N. H. He formerly was night superintendent with W. S. Libbey Co., Lewiston, Me.

Harry C. Robbins has been elected a director of Bigelow-Sanford Carpet Co., Inc., New York, N. Y.

Jewett M. Smith has retired as production manager of the Interwoven Stocking Co. plant at Martinsburg, W. Va.

John W. Solomon has been named vice president of Monarch Rug Mills, Dalton, Ga.

R. M. Spofford has resigned as assistant superintendent at Franklin Mills, M. T. Stevens & Sons Co., Franklin, N. H. He has been succeeded by **Richard Robertson.**

A. L. Strawn has been elected superintendent of the Ninety-Six Plant of Greenwood Mills, Ninety-Six, S. C., succeeding **J. G. McNeill**, retired.

Fred Surr has been named superintendent of Baxter Woolen Co., Inc., Somersworth, N. H. **Frank Vayo** has been succeeded as overseer of weaving by **Frank Hermon.**

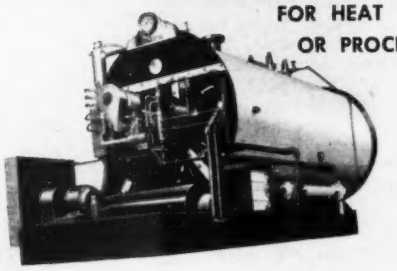
Clarence Taggart has been elected a vice president of Riegel Textile Corp., New York, N. Y.

J. B. Tollison has been appointed division manager of the Hartwell, Ga., and Williamston, S. C., throwing plants of Textron, Inc. **B. W. McKenzie** has been transferred to Hartwell, succeeding Mr. Tollison as plant manager. **W. E. Simmons** has been promoted from general overseer of the weave room at the Honea Path plant to superintendent.

Raymond E. Townsend has joined Callaway Mills, LaGrange, Ga., as dye technician at the Valway plant.

STEAM

FOR HEAT
OR PROCESS



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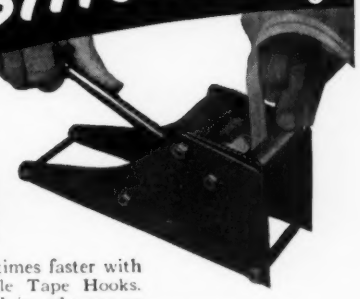
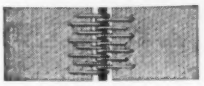


SPINDLE TAPE
LACING EQUIPMENT



Lace spindle tapes 10 times faster with Clipper No. 25 Spindle Tape Hooks. Tapes can be prepared in advance so frame is shut down only long enough to place new tape on the pulleys and join ends with connecting pin. Tapes run true—last longer—run smoother—require less tension—VIBRATION IS ELIMINATED

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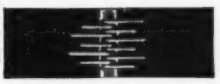

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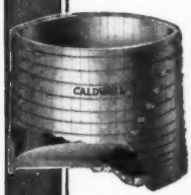

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News About MEN

(Continued)

W. Allen Traver has retired as chairman and a member of the board of directors of Franklin Process Co., Providence, R. I. **Walter E. Wolfe** has been re-elected president. **Milton E. Davis,** manager of the Philadelphia, Pa., plant has been named a vice president. **Hubert N. Graves** has been elected vice president of the Franklin Process Spinning Mill, Inc., Fingerville, S. C.

D. H. Tyson has been elected treasurer of Botany Mills, Inc., Passaic, N. J. He succeeds **George W. Shaddock,** who is now president.

William J. Whitehead, managing director of Wabasso Cotton Co. Ltd., Three Rivers, Que., has been elected president to succeed his father, the late **C. R. Whitehead.**

Charles Widlitz has been appointed executive assistant to **Dewey D. Stone,** president of Harodite Finishing Co., Inc., North Dighton, Mass.

OBITUARY

William Amory, 84, chairman and former president of Pepperell Mfg. Co., Boston, Mass.

Walter R. Britland, 61, former superintendent of the Merrick Mills of American Thread Co., Holyoke, Mass.

James Brown, 66, retired assistant manager of the Renfrew Bleachery, Greenville, S. C.

John M. Brown, director of purchases at Veeder-Root, Inc., Hartford, Conn.

Edmund H. Callahan, 56, head of the New York office of Ripon Knitting Works, Ripon, Wis.

F. William Clarenbach, former superintendent of the Stevens Mill of M. T. Stevens & Sons Co., North Andover, Mass.

Mrs. George B. Cocker, 73, president of Cocker Machine & Foundry Co., Gastonia, N. C.

Samuel H. Elliott, 61, general manager of Delta Finishing Co., Philadelphia, Pa.

Joseph J. Gogolinski, 44, superintendent of Suffolk Knitting Co., Lowell, Mass.

Frank J. Hale, 91, senior director of the board of Saco-Lowell Shops, Biddeford, Me., and director of Scott & Williams, Inc., Laconia, N. H.

William E. Holt, 80, chairman of the board of Wennonah Cotton Mills, Lexington, N. C.

Robert C. Kerr, 90, a founding director and former president of American Thread Co., New York, N. Y.

Dr. Robert P. Knapp, 68, medical director for Cheney Bros., Manchester, Conn.

C. Walter Kuhl, 76, chairman of Carbic Color & Chemical Co., New York, N. Y.

Pierre Lepoutre, 62, president of Argonne Worsted Co., Woonsocket, R. I.

Harry Mellinger, 53, president of Masterknit Mills, New York, N. Y.

Robert G. Presnell, 81, a director of Morganton Full Fashion Hosiery Mill, Morganton, N. C., and Valdese Mfg. Co., Valdese, N. C.

Joseph S. Ragsdale, 51, head of wool purchasing for Fieldcrest Mills, Fieldale, Va., and vice president and a director of Oakdale Cotton Mills, Jamestown, N. C.

Hyman Stein, 48, general superintendent of Star Woolen Co., Cohoes, N. Y.

Guy W. Talbert, retired vice president for Allied Chemical & Dye Corp., New York, N. Y.

Charles R. Whithead, 86, president and founder of Wabasso Cotton Co. Ltd., Three Rivers, Que.

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POSITIONS VACANT

WANTED—TEXTILE school or chemical graduate with textile mill experience for development work in dyestuffs application. Should have general fiber knowledge, especially of the newer synthetics. Sandoz Chemical Works, Inc., 61 Van Dam St., New York 13, N. Y.

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POSITIONS WANTED

THROWING SUPT—48 yrs. old with 29 yrs. Intensive experience, beginning as operator, advancing to superintendency of new 25000 spindle plant, in twisting, combing, redrawing, reeling and quilling of silk, rayon, acetate and nylon. Includes 6 yrs. supervising throwing silk tram, organzine and hosiery yarns. Married. PW-1958, Textile World.

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DIRECTOR OF Sales and Merchandising available to a manufacturer of consumer goods in the textile, home furnishings, or knit goods industries, as result of company purchase. Age in early forties, with 23 years' experience covering all phases of sales and sales management, including planning, research, analysis, controls, promotion, and presentations. PW-2539, Textile World.

NARROW FABRICS & Woven Labels. Young all around man seeks position as mill manager or superintendent. Experienced on all types of Jacquard Looms—Maintenance and production. Will travel, if necessary. PW-2512, Textile World.

YOUNG TEXTILE Engineering Graduate, 4 years experience as section man, second hand and night overseer of large spinning room, making wide range of counts and blends. Desires position as overseer of spinning in large or medium size plant. Box PW-2453, Textile World.

OVERSEER OF Cotton Spinning or Twisting available soon. Over twenty-five years experience on wide range of numbers. Dependable, steady and good manager of help. PW-2279, Textile World.

SUPT. OR Overseer of Weaving available anywhere in the States or will take a contract for Foreign Service. Experience consists of 20 yrs. Supervision on Draper loom and Crompton & Knowles looms. Also experience on plain or Dobby weaves; Cottons, Synthetic Fibres. Have some preparation & slashing experience. State salary & benefits in letter. PW-2583, Textile World.

CONTRACT WORK

Wanted—Commission throwing of nylon mainly thread construction however price must be very low and good quality several thousand lbs. per order. CW-2417, Textile World.

BUSINESS OPPORTUNITY

British mfr. arriving New York May 1954 wishes contact organization mass producing P.C.C. industrial protective clothing and sports clothing with view to exchanging information leading to possible close tie-ups. BO-2461, Textile World.

WANTED
Plush Mill and Dye House
W-9165, Textile World
330 West 42nd St., New York 36, N. Y.

Wanted to Buy—LOOMS
4x1 or 4x4 giant box rug looms 8 to 16 harnesses, Knowles Head, non-automatic—approximately 48" width.
W-2411, Textile World
330 W. 42 St., New York 36, N. Y.

MANUFACTURER'S REPRESENTATIVES WANTED

A leading manufacturer of heating equipment used for textile processing needs additional sales representation in the general Middle Atlantic area and the South. We are totally revising our distributive organization and we invite sales or heating engineers who understand textile drying and curing systems to write us. We are particular about quality, so do not answer unless you are exceptional people. Ours is an exclusive franchise that is valuable. Please advise your qualifications, territorial interests and types of accounts now served.

RW 2302, Textile World
330 W. 42 St., New York 36, N. Y.

WANTED
CALENDER
suitable for finishing woven Saran. 80" face, 3 rolls (2 heated, 1 husk), pressure to 30/60 tons. Write
W-1861, Textile World
330 W. 42 St., New York 36, N. Y.

DYESTUFFS
Will buy your surplus and obsolete dyes and chemicals for cash.
NEW ENGLAND PRODUCTS CO.
91 Oliver St. Boston, Mass.
Established 1919

POSITIONS OPEN

We can place—GEN. SUPT. large cot. mill; day and night supts. woolen mills; supt. combed cot. yarn mill; sweater supt; head of production and planning knit. mill; asst. designer fancy worsted men's wear.

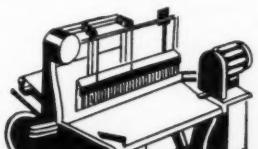
OVERSEERS for woolen card.; knit goods finishing; garnetting; sewing and finishing knit. fabrics; woolen finishing (2); woolen dressing; cot. weaving and slashing Draper looms, denims (South); cot. carding (South); silk and synthetic skein, yarn and piece goods dyeing; head machine printer; second hands cot. spin. and slash.

TEXTILE SCHOOL instructors for chemistry and dyeing; tex. school graduate to learn designing; plant engineers; knit goods designer; knit goods pattern maker and grader; laboratory technician worsted combing plant; salesman for warp knit fabrics, tex. machinery and soaps; knit. machine fixers (several); garnett fixer.

If you are available for one of the positions listed here, or for any other executive position in textiles, SEND US PROMPTLY YOUR RESUME. It will be in STRICTEST CONFIDENCE. No charge unless position is accepted through our Service.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington St. Boston 8, Mass
Telephone LIberty 2-6547
Over 55 Years in Business Placing and in Supplying Textile Mill Executives.

WANTED
Position as Superintendent or Manager of textile plant. Fifteen years experience as Superintendent and Manager. Now employed as General Superintendent yarn mill with small weaving unit. Experienced on knitting and weaving yarns of various cottons and rayons. Producer and good manager of labor. Married, family, age 47, good education.
PW-2095, Textile World
330 W. 42 St., New York 36, N. Y.



SEARCHLIGHT
Equipment Spotting Service

NO CHARGE • NO OBLIGATION

This service is aimed at helping you, the reader of TEXTILE WORLD, to locate used and surplus new textile machinery and equipment not currently advertised. (This service is for user-buyers only.)

First, read the dealer ads on the following pages. A 5-minute study may locate the equipment now.

Second, send in the specifications of the equipment wanted on the coupon below, or on your own company letterhead, to

Searchlight Equipment Spotting Service
c/o Textile World
330 W. 42nd St., N. Y. 36, N. Y.

Your requirements will be brought promptly to the attention of the used equipment dealers advertising in this issue. You will receive replies directly from them.

Searchlight Equipment Spotting Service
c/o Textile World
330 W. 42nd St., New York 36, N. Y.
Please help us locate the following used equipment:

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NAME ..... TITLE .....
COMPANY .....
STREET .....
CITY ..... ZONE ..... STATE 5-54

HOLD PRODUCTION COSTS DOWN

with this like-new

WEAVING, THROWING & NARROW FABRICS EQUIPT.

at prices you can AFFORD to pay!

1—Complete Southern
WEAVING PLANT

80,000 sq ft. 1 story modern building. Equipment sold as individual items. We invite your inquiry on this real estate with or without machinery.

49—1951 C&K 60" 5-6 Looms
12—1948—C&K 56" 5-6 Looms
28—1947 C&K 72" 5-6 Looms

20 harness, 3 shift pick counters, 10 bank warp stop motions (4 banks only with drop wires. Payne let-off. Center filling fork. Looms completely equipped. Excellent condition.

60—FOSTER 75-A
NYLON CONERS

Roller bail pineapple attachments. Gear gain. Motorized. Stainless steel emulsion troughs and rolls. Excellent condition.

8—1947 ATWOOD
10-B
DOUBLE TWISTERS

1 lb. package.

15—#250 UNIVERSAL 1951
NYLON SIZING MACHINES

Complete with
circulating system and viscometer.

40—Universal #50 L-Drive Coners

3—30 gear gain boxes.
Anti-wear tensions. Motorized.

1—COMPLETE NARROW
FABRICS PLANT

Including 16 Standard 15'8" Fletcher Looms, 4—18' Fletcher Looms, motorized, cam motions and Dobbies, 50 extra battens 18 to 110 space. Universal #10 Quillers. Knapp Warper. Thousands of spare parts and supplies.

18—Atwood Model 110
1 lb. pkge. D. D. TWISTERS

Complete with bobbins and supplies.

90—Spindles Whitin
Schweiter Automatic Quilling

1945. Excellent condition.

All items subject to prior sale

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214 - 222 Hamilton Street Phone HEmlock 3-7497 3-7498 Allentown, Pa.

350 No. 50 UNIVERSAL CONERS—10 with PINEAPPLE ATTACH.
ALL "L" DRIVE-GEAR GAIN. S. S. TROUGHS—TUBE & 3° 30' CONE ATTACHMENTS

10 ATWOOD REDRAW FRAMES—Large Package

35 NO. 75 FOSTER CONERS S. S. EMULSION TROUGHS & ROLLS—3°30' TAPER

4—YARN CONDITIONING BOXES—1 H&W—1950—Type ST-2

100—S-5 LOOMS—56"—S-6 CLUTCH—8 S-6 LOOMS—56"

100 M. FIBRE HEAD SPOOLS 4-9/16"T x 3"H x 1½" Bbl.

1000 ALL BAKELITE 5B & 10B SPOOLS 6"T. x 4"H.

1—HERMAS INSPECTION FRAME—82"

4—ARNOLD RUBBER COVERING MACHINES —1953—96 SP.

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530 N. FULTON ST. ALLENTOWN, PA. Phone 3-7545

FOR SALE!

1—Werner 6 Box 50" Soaper
2—Morrison 60" SS Dye Jigs
1—Textile 6 Roll 45" Calender
1—Butterworth 4 Roll 80" Mangle
32—Copper 113" Face Dry Cans
17—Copper 113" Face Dry Cans
7—Copper 80" Face Dry Cans
1—Butterworth 2 Roll 110" Mangle

James E. Fitzgerald 10 PURCHASE ST., FALL RIVER, MASS.
Telephone 8-5616
SPECIALIZING IN BLEACHING, DYEING AND FINISHING MACHINERY SINCE 1920

FOR SALE

1—TRENT ELECTRIC OVEN 440 VOLT Inside size 41½" high x 25¾" wide x 26¼" deep with 3 shelves. . **$300.00**

1—EMERSON 8-BASKET CONDITIONING OVEN 115 Volt 750 Watts. **$35.00**

1—HUNTER CARBONIZING TANK — NEVER USED Lead-lined Cypress Tanks 11' long x 4'6" deep x 8' wide Fittings Acid Resisting Metal

6—S.A.G. FRENCH COMBS New 1948—Used but little

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1—BUTTERWORTH 4-ROLL 60" DYEING MANGLE. **$2500.00**

25,000 AUTOMATIC FILLING BOBBINS for W-3 Looms 8" O.A.—7" Barrel

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DYEING • FINISHING • PRINTING • MACHINERY

INDIVIDUAL MACHINES FOR IMMEDIATE REMOVAL

LARGE and MODERN MILLS

MILL I—PARTIAL LIFTING

R. B. & F. PRINT MACHINES, 1 color-10 colors, 45"-64" wide, fully equipped with mandrels, color pans, doctor blades & holders, motors, etc.

AGERS 24'-30' long 50"-64" wide, stainless steel ball bearing carrier rolls, etc.

PRINT DEPARTMENT INCLUDES: Hydraulic forcing jack, kettles, polishing lathe, copper print rolls, etc.

DYE JIGGS, 45"-70" wide, all stainless steel, etc.

DYE BECKS, 8'-16' wide, all stainless steel, etc.

PADDERS, 50"-72", pneumatic and hydraulic, rubber rolls, etc.

DRY AND CURE BOXES, gas fired, 2 fan-10 fan, temp. controls, etc.

TENTER FRAMES, 50"-64" wide x 30'-60' long, enclosed gears, stainless clips, power openers, etc.

PALMER, 66" wide x 60" dia., blanket, quetch, gas heaters, etc.

SLOP WASHERS, all stainless steel, etc.

CALENDERS, 50"-60" wide, 3 roll finishing type, etc.

ALSO: tubers, beamers, etc.

MILL II—PARTIAL LISTING

FINISHING RANGE: 110' x 64" super tenter frame, S. S. clips, enclosed gears, elect. guiders, D. C. drive with M G set; national 90' housing with 18 fans, Simpson batcher, 60" pneumatic padder 2 rubber rolls, air compressor, scray, etc.

PALMER-TENTER-PAD UNIT: 60" padder 2 rubber rolls, 60' x 60" tenter frame, elect. guiders, S. S. clips, 40' national housing 8 fans, 65" palmer, blanket, etc.

NATIONAL DRYER 18 fans, model E, aluminum housing, 108" wide poles, etc.

HINNEKENS BOIL-OFF MACHINE, 66" wide, stainless conveyor & drum, etc.

EXTRACTORS, 60" stainless basket, auto. timer, safety cover, etc.

TENTER FRAME 60' x 60", enclosed gears, national 2 fan housing 15' long, etc.

SEMI DECATORS 45"-60", double vacuum pumps, blankets, etc.

HYDRAULIC CALENDER, 3 roll finishing type, 10 tons, etc.

DYE JIGGS, 50"-60", all stainless steel, etc.

DYE BECKS, 10', 12', 14', all stainless steel, etc.

SINGER, 60" double gas burner, ball bearing, etc.

ALSO: Sewing machines, tubers, embossers, quetches, etc.

SEND FOR FULL DETAILS

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IPA SOUTHERN, INC.

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NORTHERN OFFICE

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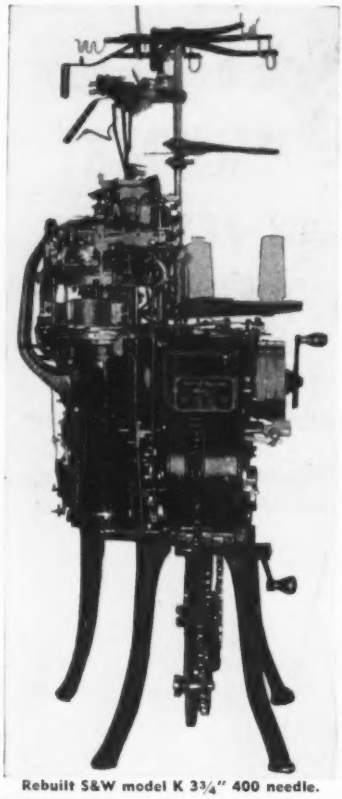

Rebuilt S&W model K 3¾" 400 needle.

KNITTING MACHINERY FOR SALE

10—Scott & Williams Komet Links-Links, 3¼", 186 needle, Lot #28088.

25—S&W Komet Links-Links, 3½", 200 needle, late model, 2 feed rubber tops. Lot #28090.

9—S&W Komet Links-Links, 3½", 240 needle, late model, 2 feed rubber tops. Lot #28091.

4—Bentley Komets Links, 3½", 200 needle, late model, 2 feed, rubber tops. Lot #28092.

12—Bentley Komet Links, 4½", 84 needle, 2 feed, rubber tops, Lot #28094.

43—Banner 19 step Wrap machines, 3½", 220 needle & 240 needle, 40 color spindle, rubber tops. Lot #28096.

21—Banner Wraps 8 step 3½", 220 needle, Lot #28098.

25—Banner Wrap & Reverse 3¾", 120 needles, 18 gauge. Lot #27003.

20—Banner SCP machines, 4", 108 needle, Lot #28099.

72—Wildman 66 gauge TWD single unit full fashioned machines. Lot #28076.

2—Reading 66 gauge, 30 section full fashioned machines, fully automatic, serial range 15000 & 16000. Lot #28133.

2—Kalio 60 gauge, 32 section machines, automatic welt turners, one 1½ yrs. old, one 2½ yrs. old, both have lace and loopless toe. Lot #27970.

4—Reading 51 gauge, 30 section machines, automatic welt turners, late model. Lot #28042A.

3—Smith Drum 25 pound Rotary Dye Machines, 12 RD, 4 pocket, motor driven, rebuilt.

2—Smith Drum 50 pound Rotary Dye Machines, 12 RD, 4 pocket, rebuilt, motor driven.

2—Smith Drum 100 pound Rotary Dye Machines, 12 RD, 4 pocket, rebuilt, motor driven.

2—Strickland Paddle Dye Machines, motor driven. Lot #28084.

1—Bock 24-BC Extractor, motor driven. Lot #25050.

1—Tolhurst 30" Extractor, motor driven, rebuilt. Lot #26812.

1—Smith Drum 40" Extractor, motor driven. Lot #27523.

1—48" Keystone Extractor. Lot #16929.

A COMPLETE LINE OF USED & REBUILT KNITTING MILL MACHINERY.

MORRIS SPEIZMAN CO. INC.

508 W. FIFTH ST. • PHONE 45546 • CHARLOTTE, N. C.

BIALEK'S BEST BUYS

C&K, W-3, 4x1 AUTO. 82", 26-HARNESS

WHITIN AUTO. QUILLER, 48-SPINDLES, 1948-9

Foster Cone Winders, Model 12
S. A. C. M. Worsted Spinning Frames, 3" G, 2" R.
Josephy Woolen Cards

Cocker 9-drum Slasher
Johnson 7-drum Slasher
Titan Portable Knotter

COMPLETE SOUTHERN RAYON WEAVING MILL

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IN STOCK

STAINLESS STEEL TANKS

STORAGE & MIXING

2—6000 gal. Vertical—used
1—5700 gal. Horiz. T304—unused
2—5000 gal. Vertical—used
1—3000 gal. Vertical—unused
1—3000 gal. Horizontal—used
20—from 15 gal. to 1000 gal. sizes
15—Stainless Steel Jacketed Kettles, some with agitators.

PERRY EQUIPMENT CORP.

1430 N. Sixth Street Philadelphia 22, Pa.

TEXTILE AUXILIARIES

WE SPECIALIZE IN FINISHING MACHINERY

We have in stock bleach house, dye house, print room and finishing room machinery. All in excellent condition. Also drying equipment, motors, etc.

Call or Write us for Prompt, Courteous Service.

Office—146 West River St. Telephones—Dexter 1-9650, 1-8837

PROVIDENCE, R. I.

WE BUY AND SELL

TEXTILE MACHINERY

THROUGHOUT THE WORLD!

GEORGE W. EGAN

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for
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EXCLUSIVE LIQUIDATION SALE

OF

LAND, BUILDINGS and MACHINERY

OF THE WOOLEN DIVISION OF THE

A. D. JUILLIARD & Co., Inc., STOTTVILLE, NEW YORK

Real Estate:

400,000 square feet of Modern Mill Buildings
High Pressure Steam Boilers
Turbo-Generating Equipment
Excellent Water Supply and Filtering Plant

Partial List of Machinery:

Complete Picking Room with Fearnaught Pickers and Blenders
24 Davis & Furber Cards 60x60 and 48x60, with tape condensers, Broad Band feed, Bramwell feeders and Peraltas.
24 Davis & Furber Ring Spinning Frames, 120 spindles, 6½" gauge, 5" ring
125 Crompton & Knowles W3 Looms, 82" and 92" cloth
64 Crompton & Knowles 4x4 Looms, 82" cloth
4 Davis & Furber Jack Spoolers, dressing reels and creel
1 Parks & Woolson Cloth Steamer 72" wide W/Vacuum Extractor
1 Parks & Woolson Teasel Gig, 2 cylinders, 72" wide
2 James Hunter Pneumatic Squeezers 72" wide, with scutchers and folders
1 James Hunter Pin Tenter Dryer, 2 sections, 72" wide
1 James Hunter Carbonizing Range, 2 Pneumatic squeezers 78" wide, acid tank, Hunter Pin Tenter 2 section Dryer
4 James Hunter Model 26 Fulling Mills
1 Riggs & Lombard Double Open Soaper
15 Rodney Hunt and James Hunter Stainless Steel Enclosed Dye Kettles, 8', 4', 2' and 1' wide
20 Parks & Woolson Quadruple Gigs, 66½" width
9 Davis & Furber Single Acting Nappers, 70" wide
3 Kenyon Chinchilla Machines, 63" width
1 Parks & Woolson Londonizer
Complete Machine Shop and Woodworking Plant
Large amount of mill supplies, electrical equipment, motors, trucks, Laboratory, water tanks etc.

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REPUBLIC TEXTILE EQUIPMENT CO.

40 WORTH STREET NEW YORK CITY

Purchase and Sale of Used Machinery

· APPRAISALS · PURCHASE · SALE · LIQUIDATION OF MILL PROPERTIES

MODERN Woolen and Worsted Machinery

3—*Davis & Furber 48" wide x 60" dia. all iron cards w/ take condensers, double rub,* equipped with *Duesberg Peraltas*

6—*82" W3 Looms, year 1945, Motor Driven with motors,* beam and a half per loom. *Large quantity of loom supplies* to go with above.

3—*Air Perm Humidification units,* used approximately 2 years.

2—*8' James Hunter Washers,* rubber rolls, motor driven.

2—*James Hunter 26B Fulling Mills, Stainless Steel lined, Stainless Steel throats, rubber rolls, motor driven.*

1—*Parks & Woolson Brushing Machine,* serial #6021, 4 cylinder, 66½" wide.

1—*Parks & Woolson Semi-Decator, year 1943,* serial #8217, cylinder 72" x 36", Nash Hytor Pump size L-4, Motor Driven

1—*Parks & Woolson Semi-Decator, year 1949,* cylinder 72" x 36", Nash Hytor Pump, Motor Driven.

12—*Sets Davis & Furber 48" 60 end Divider Rolls.*

1—Whitin 60" 120 end Divider Rolls.

1—Abington card stripping unit for 60" cards, 12 card unit

1—*Riggs Lombard 72"* Ball Bearing *Squeeze Rolls,* 20" diameter, roller chain drive, machine rebuilt.

3—Worcester Warp Company compression spoolers, 32¼" Drum with yardage combers.

2—*Victor Charpentier (Belgium) Dusters, Aero-Spiral Type,* Year 1950, equipped with crush rolls, length of Helicoidal *Drum 141¾",* dia. of drum 39⅜" including teeth.

The above is offered subject to prior sale or withdrawal.

DUNN CORPORATION

87 Weybosset St. Providence, Rhode Island

GAspee 1-4041 and 1-4042

LIQUIDATING

RIVERVIEW FINISHING CO., PATERSON, N. J.

1—Johnson 7 Can Slasher—$1200.00
4—Werner 60" S. S. Jiggs—M. D.—Late Model
3—Werner 50" S. S. Jiggs—M. D.—Late Model
1—60" Brushing Machine—M. D.—$450.00
1—3 Roll 68" Hydraulic 30 Ton Calender—M. D. —$4500.00
1—Hinnekens Boil Off—Late Model
1—3 Roll 65" V. V. Calender—M. D.—$3500.00
1—V. V. 54" Embosser, 2 Roll—$2000.00—M. D.
3—10' S. S. Dye Becks, Motor—$700.00 each
2—8' S. S. Dye Becks, Motor—$600.00 each
1—V. V. 48" Decatizer, Pump, Motors & Blanket—$1600.00
1—48" Eliot-Hall Flat Folder, M. D.—$300.00
1—V. V. Tenter Frame—30' x 62" S. S. Clips—M. D.—$1650.00
3—Beamers 76"—55"—50"—$125.00 each—M. D.
1—68" Progressive Hyspeed Exam. & Measuring Machine, with reverse—M. D.
1—60" Extractor—$600.00—M. D.
1—V. V. 50" Scutcher—$650.00—M. D.
1—V. V. 64" Palmer, Quetch & Blanket, M. D.—$2500.00
4—Textile Squeeze Sets, 96" wide, 2 Rubber Rolls 19" & 12" diam. roller bearings
1—set 7 Dry Cans—72"—M. D.

FOR ALL INFORMATION—WRITE, WIRE OR CALL

A & M BLANK CO., INC.

301-313 East 22nd St. (at 7th Ave.) Paterson, N

SHerwood 2-1367-8

BRASS PIN-PLATES All Sizes

PUT YOUR PIN TENTERS IN TIP-TOP CONDITION

● Pins in Stainless, Monel, Plain Steel.

All Diameters Any Length

SEND US OLD PLATE FOR QUOTATION

SOUTHERN TEXTILE WORKS

P. O. BOX 406 ANDERSON, S. C.

STEAM TURBINES

And Gear Reduction Units

1—Westinghouse 150 H.P. Steam Turbine and Gear Reduction Unit.

1—Westinghouse 100 H.P. Steam Turbine and Gear Reduction Unit.

These units are in excellent condition and priced reasonably. They are designed for inlet steam pressures of 105 and 90 lbs. respectively and 15 lb. back pressure. They can be used efficiently with higher initial steam pressure.

FS-2343 Textile World
330 W. 42 St., New York 36, N. Y.

COTTON & RAYON EQUIPMENT

40—H&B & T&S Cards, 37", 10" coilers
4—Single Process & Finisher Picker 37"
2—S/L size Kettles, 242 gallon
1—H&B Waste Opener, 18" "Tomlinson"
1—Vacuum stripping Tank & Pump
2—H&B Twisters 5½" g 4½" ring 120 sp.
3—Universal Cone Creels, 400 end
2—Roving Bobbin Strippers
1—#6 Sturtevant Blower
1500—10" Roving Cans
1—B/C Cheese Creel VC318, 1949
4—H&B 5 delivery 10" Coiler Drawing Frames
2—B/C #69 Model HW High Speed Warpers
2—Steel Tanks 7'6" x 4' x 3'4" deep ¼" steel
1—Simplex Time Clock & card racks

Loom Supplies

1500—Loom Motors ½ HP, ¾ HP, 1 HP, 550 & 220 V
200—Electric Stop Motions, 4 & 6 bank
4000—Sliding bar stop Motion Rods
60,000—Heddle Frames 44" to 80" for all size heddles
20,000,000—Standard & Duplex new & used heddles
1,000,000—Stainless Steel Heddles, 12 & 13"
2,000,000—Doup & super doup 12 & 13" heddles
400—Roper Let-offs complete
400—Loom Beam Heads, 130T 8P, 22" dia.
150—Loom Beams, 24" dia. 120T 6P 44" b/h NEW
200—Dobbies, 16 h. 20 h. C&K, Whitin
2500—Pick Gears, Stafford, K, C&K looms
1200—Stafford Cutters, complete
400—Pick Clocks, Waltham, Durant, Veeder-Root
400—Batteries complete for Draper Looms

MACHINERY SALES CORPORATION

New Bedford, Mass. P. O. Box 560 Phone 7-9466

FOR SALE

WOOD BEAMS

We have available for sale at a very modest price 410 wood beams, each 54¼" long with 28" flanges and 12" barrel. These beams are in good condition and are suited for a wide variety of applications. Will sell all or part.

FS-2313 Textile World
520 N. Michigan Ave., Chicago 11, Ill.

A. F. MACHINERY CO., INC.

Offers for the First time the following

OPENING EQUIPMENT

13—F5 S.L. Feeders
2—F5 S.L. Waste Feeders
2—Lummus Gyrators
2—S.L. Feed Tables

PICKERS

2—S.L. 3 Beater Pickers. Rebuilt by Aldrich 1951
6—Aldrich 2 Beater Pickers. New in 1947

CARDS

54—S.L. 40" Cards, 1920-21, 12" Coilers 100's-110's Wire
89—Whitin 40" Cards 1919-1920, 12" Coilers, 100's-110's Wire
30—H & B 40" Cards, 1917, 12" Coilers, 100's-110's Wire
52—H & B 40" Cards, 1908, 12" Coilers, 100's-110's Wire
All above cards equipped with Abington stripping system

DRAWING

6—S.L. Lap Winders, 1948, M.D.
128—Deliveries S.L. Controlled Draft 5 Roll Drawing, 1948, M.D.

SLUBBERS

5—S.L. 10 x 5 Slubbers Equipped with J-3 Long Draft, 108 Spindles Each, 1948, M.D.
14—S.L. 10 x 5 Slubbers Equipped with J-3 Long Draft, 102 Spindles Each, 1948, M.D.
6—S.L. 8 x 4 Slubbers, 1923 Model. Rebuilt and Equipped with J-3 Long Draft in 1948, 160 Spindles Each, M.D.

SPINNING

24—Frames H & B Spinning, 328 Spindles, 2¾" Gauge, Tape Drive, Equipped with Casa Blanca Long Draft, M.D.
7—Frames H & B Spinning, 288 Spindles, 2¾" Gauge, Tape Drive, Equipped with Casa Blanca Long Draft, M.D.
30—Frames Whitin Spinning, 272 Spindles, 3" Gauge, Tape Drive, Equipped with Casa Blanca Long Draft, M.D.
25—Frames Whitin Spinning, 240 Spindles, 3" Gauge, Tape Drive, Conventional Draft, Arranged for M.D.
31—Frames Whitin Spinning, 272 Spindles, 3" Gauge, Tape Drive, Conventional Draft, Arranged for M.D.
24—Frames S.L. Spinning, 252 Spindles, 3¼" Gauge, Tape Drive, Casa Blanca Long Draft, B.D.
13—Frames Whitin Spinning, 240 Spindles, 3¼" Gauge, Tape Drive, Casa Blanca Long Draft, B.D.
6—Frames Whitin Spinning, 252 Spindles, 3¼" Gauge, Tape Drive, Casa Blanca Long Draft, B.D.
9—Frames Whitin Spinning, 264 Spindles, 3½" Gauge, Tape Drive, Casa Blanca Long Draft, M.D.
6—Frames Whitin Spinning, 240 Spindles, 3¾" Gauge, Tape Drive, Conventional Draft, B.D.
21—Frames H & B Spinning, 224 Spindles, 4" Gauge, Tape Drive, 4 Roll H & B Long Draft. 13 M.D.-8 B.D. All Frames Box Head Type. Ranging in Age from 1923 to 1936.

SPOOLING—WARPING—WINDING

1—B.C. Hi-Speed Spoolers, 162 Spindles, Type C, 1950.
2—B.C. Hi-Speed Warpers, Type VW with 432 End Type VC Creel.
2—B.C. Hi-Speed Warpers, Type VH with 504 End Type VC Creel.
1—Foster 102 Winder, 100 Spindles, Equipped to Wind on Paper Cones, M.D.
1—No. 44 Universal Winder, 120 Spindles, Steel Drums, Equipped to Wind on Paper Cones. New in Original Crates from Universal.

SLASHING

1—Westpoint 3 Cylinder Slasher with PIV Drive, Stainless Steel Size Box, 8 Beam Creel, 1948 Model.
1—S.L. 2 Cylinder Slasher with PIV Drive, 8 Beam Creel, Brown Controls.
4—H & B 2 Cylinder Slashers, 1 with PIV Drive, 2 Equipped with Brown Controls, 2 Equipped with B.C. Controls.

TYING-IN MACHINE

1—B.C. 4E Stationary Tying-in Machine Rebuilt in 1953.

LOOMS

220—Draper Model X2 Looms, 47" R.S., M.D., Brown Spring Tops, Auxiliary Shafts, Stafford Cutters, Midget Feelers, Reset Pick Clocks, 24" Diameter Beams, 6 Bank Stop Motion, Age 1946-48.
30—Draper Model E Looms, 45" R.S., M.D.
215—Draper Model E Looms, 45" R.S., B.D.
448—Draper Model E Looms, 41½" R.S., M.D. All of the Above Looms Equipped with Lacy Tops, Auxiliary Shafts, Veeder Root Reset Pick Clocks.
118—C & K C2, 4 x 1 Looms, 45½" R.S., B.D. 50 Equipped with 20 Harness Dobbies, Balance Cams. With Each Loom 2 Shuttles, 1½ Beams, 1700 Drop Wires, 2 Harnesses with Heddles.

NAPPERS

1—Monfort Breaker Napper.
1—Monfort Felter 84".
9—Woonsocket Nappers.

FINISHING

1—Butterworth Range Consisting of 28 Copper Cans, Removable Journals, Air Guiders, One 10' Practically New Tenter Equipped with Stainless Steel Clips and Water Mangle.
1—Textile Range Consisting of 24 Copper Cans, Removable Journals, Air Guides, One 20' Practically New Tenter Equipped with Stainless Steel Clips and Water Mangle.
1—Textile Finishing 4 Bowl Calender, 2 Husk, 2 Steel.
1—Textile Finishing 6 Bowl Calender, 4 Husk, 2 Steel.
1—Butterworth 5 Bowl Calender, 3 Husk, 2 Steel.
2—Curtis & Marble Folders with Air Lift.
1—Elliott & Hall Folder with Air Lift.
1—Curtis & Marble Horizontal Brusher and Sander.

DYEING

2—Venango Package Dyers Complete with Extractors, Dryers and Air Compressors, Each Machine 650 Lb. Capacity, 256 Packages Per Machine. All Constructed of Stainless Steel, Installed in 1951, Comparable to New.
3—Vacuum Dye Machine Co. Raw Stock Dye Machines, Each Machine 1000 Lb. Capacity, Excellent Condition, Installed in 1947.
1—Sargent Raw Stock Dryer, 40' Long, 8' Wide, Equipped with Hopper Feed, Pneumatic 50" Squeeze Rolls and Dryer Feed. Machine in Excellent Condition, Installed in 1948.
1—Chlorinator.

ROLL COVERING

1—Complete Roll Covering Shop.

MACHINE SHOP

1—Complete Machine Shop.
1—Complete Woodworking Shop.

MISC.

2—Lummus Double Chamber Automatic Waste Presses, 1947, One Equipped with Gyrator.
1—Economy Baling Press.
1—Holyoke Baling Press.
12" Roving Cans, Bobbins, Supplies For All Equipment.

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1—Hercules 48" Self Balancing Extractor, open top side mounted Motor
1—V. V. 42" Self Balancing Extractor M. D.
1—Set of 21 Dry Cans 72" x 23"
1—54" Verduin Hydraulic Embosser
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2—Van Vlaanderen Tubers 64"
3—Paterson Tubers 64"
2—Paterson Beamers 60"
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1—Measuregraph 72" Variable Speed Tubing & Examining Machine
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1—2 COLOR TEXTILE PRINT MACHINE 68"
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C. Chemicals and Dyestuffs
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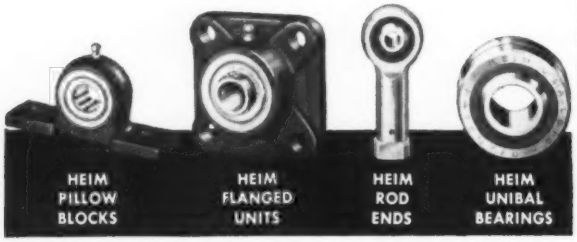

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Clark Equipment Co., Industrial Truck Div.	159	P
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Clipper Belt Lacer Co.	249	Q
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Crane Mfg. Co.	220	L
Crompton & Knowles Loom Wks.	13	R
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Custom Scientific Instruments, Inc.	242	K
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Darnell Corp., Ltd.	218	P
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Dayton Rubber Co., The Textile Div.	24-25	RT
Deutscher Spinnereimaschinenbau, Ingolstadt	249	T
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Dinsmore Mfg. Co.	243	F
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Dodge Mfg. Corp.	62	Q
Dolge Co., C. B.	220	B
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Evansville's Committee of 100, Inc.	152	N
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First National Bank of Atlanta	168	N
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Gates Rubber Co.	16	Q
General Dynamics Corp., Electro Dynamic Div.	151	F
General Electric Co.	48-49	F, Q
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Gulf Oil Corp.—Gulf Refining Co.	58	M
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Lane & Bros. Inc., W. T.	261	P
Leighton Machine Co.	195	L
Lewellen Mfg. Co.	230	Q
Link-Belt Co.	7	Q
Lockwood Greene Engineers, Inc.	34	N
Loper Co., Ralph E.	246	N
Lubriplate Div., Fiske Bros. Refining Co.	226	M
Manhatten Rubber Div.	50	Q
Manheim Mfg. & Belting Co.	205	Q
Maple Flooring Mfrs. Assn.	190	B
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M-B Products	236	T
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Meese, Inc.	233	P
Mellor Bromley & Co., Ltd.	160	L
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Permutit Co.	225	B
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Powell Valves	12	H
Precision Gear & Machine Co.	239	Q
Proctor & Schwartz, Inc.	176	T
Raybestos-Manhatten, Inc., Manhatten Rubber Div.	50	Q
Reeves Pulley Co.	170	Q
Refined Prod. Corp.	31	C
Rohm & Haas Co.	169	C
Rome Soap Mfg. Co.	249	C
Royce Chemical Co.	115	C
Rumford Chemical Works	193	C
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Sinclair Refining Co.	47	M
Sirrine Co., J. E.	3rd Cover	N
SKF Industries, Inc.	52	O Q
Snap-On Tools Corp.	194	B H
Socony-Vacuum Oil Co.	37	M
Solvay Process Div., Allied Chem. & Dye Corp.	235	C
Sonoco Products Co.	51	T
Southern Shuttles Div., Steel Heddle Mfg. Co.	175	R
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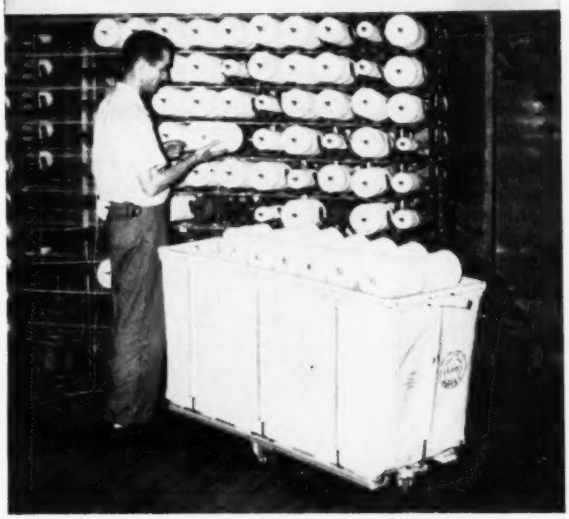

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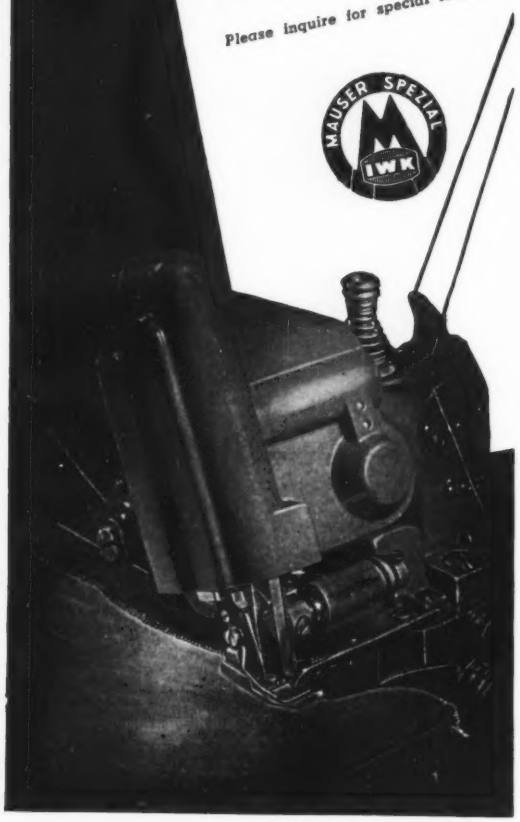

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Stephens-Adamson Mfg. Co.	39	O, Q
Stewart Iron Works Co., Inc.	218	B
Stop-Motion Devices Corp.	225	L
Stowe-Woodward, Inc.	129	E
Sun Oil Company	108	C
Superior Combustion Industries, Inc.	249	Q
Supreme Knitting Mach. Co., Inc.	209	L
Swift & Company Industrial Soap Dept.	131	C
Sylvania Electric Prod. Co.	162	F
Taylor Co., Halsey W.	206	N
Taylor-Stiles & Co.	216	T
Tennant Co., G. H.	196	D
Tennessee Coal & Iron Div.	199	O
Texas Co., The	4th Cover	M
Textile Hall Corp.	227	N
Textile Machine Works	66, 112	L
Toledo Pipe Threading Mach. Co.	216	H
Toledo Scale Co.	200	K
Tompkins Bros. Co.	210	L
Torrington Co., The (Needles)	41	L
Torrington Co., The (Bearings)	56,-57	O, Q
Turbo Machine Co.	5	L
US Bobbin & Shuttle Co.	148	RT
U. S. Ring Traveler Co.	214	T
U. S. Steel Corp.	199	O
U. S. Steel Supply Div.	199	O
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Utica Novelty & Mill Spec. Co.	246	E
Van Vlaanderen Machine Co.	237	E
Veeder-Root, Inc.	163	K
Victor Chemical Works	127	C
Victor Ring Traveler Co.	181	T
Virginia-Carolina Chem. Corp.	44-45	G
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